AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

OCTOBER 15, 1956

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The Nurseryman's Forte: To Make America More Beautiful and Fruitful

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Forms for the November 15 issue will close Friday, October 26.

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AMERICAN NURSERYMAN

F. R. KILNER
Editor and Publisher

FRED H. KILNER
Managing Editor

C. A. BRADY, Jr.
Advertising Manager

Editorial

NEWER PLANTS

To meet the needs of changing architecture and to continue the improvement possible by hybridization, new varieties of woody plants constantly are being developed, now largely by arboretums and government experiment stations, though occasionally by commercial or amateur plantsmen. Aside from a few species, such as roses, azaleas and camellias, whose large sale makes commercial production of new varieties a profitable risk, the newer woody plants are slow in getting into commerce and to the public.

Catalog nurserymen perform a service in this respect when they seek novelties to attract buyers. These are usually flowering shrubs or trees of showy characteristics, rather than functional types that are needed in the landscape trade.

Some wholesale growers occasionally plunge on a novelty, but most of them stick to a list of plants that sell readily because they are well known and dependable. A few cater to a smaller, select clientele with newer and rarer plants, but their production is not large.

The time necessary for a worthy new plant to reach the public should be reduced. Some trees and shrubs that were recommended by more than one writer in this magazine as much as 20 years ago are only now available in moderate number to those who seek them. Some are not to be had in any quantity yet.

It would seem that more of the big wholesale growers might emulate the retail catalog firms by trying out the newer plants and offering as novelties those adaptable to their areas. Garden centers could use such plants as headliners to build sales. Wholesale firms having salesmen could easily give their own sales and those of their customers a shot in the arm by adding such newer plants to their production list and then giving them the push any introduction requires.

Producers of nursery stock have been alert to new varieties in fruits and berries; if they applied the same tactics to ornamental plants developed by their state experiment station, by federal government agencies and by arboretums, no doubt there would be similar progress in the latter types of plants reaching the public.

The Mirror of the Trade

TREE BELTS PURIFY AIR

Industrial landscaping may have another virtue besides beautification and the fostering of civic good will. Planting belts of trees around factories or industrial areas as a means of helping to combat air pollution was suggested at the convention of the American Chemical Society last month, where the subject of air contamination was the subject of a 4-day review.

Tree belts, some of them 30 miles long and up to three miles wide, are being employed in England with good results to cut down on factory smoke and industrial irritants, it was disclosed. The trees change prevailing wind patterns and create updrafts around manufacturing districts to carry pollution by-products away from nearby areas.

SCHOOL PLANTINGS

Plantings on school grounds have more importance than the beautification of the premises. If suitably devised, they may be useful in the teaching of natural history, instead of time-consuming field trips. Or they may provide a form of training as valuable to embryo homeowners as carpentry and machine shop.

Educational authorities see possibilities in these outdoor classrooms beyond recreational activities, and examples have received wide attention. The participation of the children in the planting and maintenance of special features inculcates a feeling of responsibility as well as respect for property. Numerous ideas have been suggested or embodied in school grounds, and more will occur once the program is under way. Fruit, vegetable or herb gardens may be in the advanced category, but birdbaths or sundials with suitable plantings, rock gardens, hedges in place of wire fences, pools for fish and aquatics, trees for screens and windbreaks, shrubs bearing berries for the birds' consumption and like projects are interesting and purposeful.

Whatever the extent or manner of such plantings, the benefit to the children—aside from that in character and skills—in learning about plants and their care is a future benefit to nurserymen, too. It may even be a present benefit if the children convey their interest in plants to their parents.

So this program, scarcely started among elementary schools, deserves support and guidance, even initiative, from nurserymen, many of whom are on school boards in their respective communities or may be sought for advice in such undertakings.

TREE FARM FAMILY

The formation of Illinois' first tree farm family last month, when woodlands of 21 forest landowners in the state were certified as tree farms, called attention to a movement of national scope which is of interest to nurserymen.

The tree farm family plan is an arrangement in which a forest industry gives forestry services and other aids to member tree farmers who, in turn, grant the company first option to buy their forest products at prevailing market prices.

The ceremony to honor new tree farmers was the first held since the tree farm program was launched in Illinois, just over a year ago.

To qualify for tree farm certification, the new tree farmers have to meet high forestry standards of the industry-sponsored program by protecting their woodlands from fire, insects and disease and by harvesting mature trees in a manner which assures production of repeated timber crops.

The program nationally is operated by the forest industries of the United States through American Forest Products Industries, Inc., Washington, D. C. Total tree farm acreage in the nation now exceeds 40,000,000 acres of well-managed timberland, an area larger than the state of Illinois. The green and white tree farm signs are familiar to travelers in many states.

PAUL STARK, of Stark Bros., Inc., Louisiana, Mo., stopped at Brinkman Bros., Ltd., Bosham, Sussex, England, the largest fruit tree growers in Europe, on his tour of Continental nurseries last month. George Delbard, a well-known nurseryman of France, was also in the party which toured the nursery.

Seated at the head table at the president's banquet at the C. A. N. convention, left to right, Fred Fick, treasurer, and Mrs. Fick; Clyde Stocking, A. A. N. president, and Mrs. Stocking; David L. Cunningham, president-elect, and Mrs. Cunningham; Donald C. Perry, retiring president, and Mrs. Perry; Willis Stribling, vice-president elect, and Mrs. Stribling; Syd Whitehorn, controller, and Mrs. Whitehorn, and Elmer Merz, executive secretary.

Progress Cited at California Meeting

By Charles Burr

The 46th annual convention of the California Association of Nurserymen met at Hoberg's Resort, Lake county, California, September 18 to 20. The Superior chapter (Sacramento valley) was host to an enthusiastic gathering of 400 nurserymen, wives, sons, daughters and guests.

Eugene Armstrong, Capital Nursery, Sacramento, headed a list of convention hosts that included the following committee chairmen: Jerrold Vistica, Yuba City, vice-chairman and reception; Fred Fick, East Lawn Nursery, Sacramento, finance and decoration; Fred Wittsche, Sierra Gardens, Sacramento, publicity; Earl C. Lagomarsino, F. Lagomarsino & Sons, Sacramento, entertainment; Richard Oki, Oki Nursery, Perkins, sports; Dwight Ewing, Capital Nursery, trade exhibits; Harold De Orion, Germain's, Sacramento, door prizes; Mrs. Walter Tecklenburg, Teck's Nursery, Lodi, ladies' program, and Willard Little, Ferry-Morse Seed Co., Sacramento, editor of the Grapevine.

New Officers

The convention elected the following officers to serve through 1956-57: David L. Cunningham, Descanso Distributors, Chino, president; Willis Stribling, Stribling's Nurseries, Merced, vice-president; re-elected Fred Fick, treasurer, and Syd Whitehorn, Fresno, controller. Mr. Whitehorn won out over last-minute candidate, "Joe Smith."

The board of directors held their semiannual meeting Monday, preceding the opening of the convention, to hear the reports of committee chairmen and discuss new business. They elected to allow officers the privilege of voting and amended the bylaws to this effect. This action was later ratified by the convention. The directors heard from their membership chairman, David L. Cunningham, that they are now 942 strong, including a regular membership of 709, an associate membership of 93 and an affiliate (nursery employees) membership of 140, a total gain of 44 memberships over last year's figure. In his report later, Wray Hiltabrand, chief of nursery service, reported the issuance of 6,720 licenses to sell nursery stock in California.

One of the chief concerns of the directors is failure of many members to pay their dues (based on gross volume). The Los Angeles chapter directors proposed a committee to investigate the possibility of hiring specialists on dues collections, as well as a committee to investigate the possibility of supplying an assistant to Executive Secretary Elmer Merz in southern California. It was pointed out that the two proposals hinge together, as the association does not now have the funds to pay the salary of an assistant secretary.

The directors adopted the new emblem in four colors presented by a committee headed by Charles Burr, California Garden Supply Co., Palo Alto, and authorized the secretary to purchase signs carrying the new emblem, to which has been added the slogan "Planting Time Is All the Time in California." Members who have the old 2-color sign may purchase the slogan separately to affix to their present signs, if they so desire. The 24x24-inch baked-enamel 4-color sign will sell for $5, and the 5½x24-inch slogan, in two colors, baked enamel, will sell for $2.25 each. Orders will be taken by chapter secretaries.

Officers' Reports

At the first general convention session Tuesday morning, nurserymen heard the reports of President Donald C. Perry and Executive Secretary Elmer Merz, who told of the accomplishments of the association during the past year. President Perry was particularly proud of the gains made by the publicity committee in obtaining 11,000 more inches' publicity than in the previous year on the garden pages of 534 California newspapers. He also was happy with the accomplishments of the scholarship committee, which has expanded the association's program in agricultural colleges and high schools of the state.

Elmer Merz touched on the educational aspects of the nursery institutes and refresher course; the alliance with California Farmers, Inc., and the gain in nursery stock sales in California. Mr. Merz was of the opinion that the sales lag behind population gains is due to appliance purchases skimming off the first dollars of new homeowners. He said that indications are gradually supporting the theory that many post-war homemakers are now finding it possible to spend more of their income on plants and garden accessories, after resolving their obligations for in-the-home equipment.

Lynn Mossholder, Mossholder Nursery, La Habra, reported for the welfare committee. He said 151 members are now covered on health

James Wilson receives the award for low gross score in the golf tournament held at the C. A. N. convention. Eugene Armstrong, convention chairman, made the presentation.

and accident for a total of $400,000. In the workmen's compensation pool, 70 firms participating, the refund for careful safety management this year will amount to 25 per cent of the premiums paid.

Research Projects

David Stump, Armstrong Nurseries, Ontario, in reporting for the research committee, recommended three projects for continuation: Complete the survey of subjects requiring research and report to the University of California; compile a bibliography of subjects under research affecting the industry, and broaden the research projects to include an investigation of the economic phases of the industry.

He reported subcommittees on roses and deciduous fruits have supplied a list of recommended projects for research. Still to be received are reports from subcommittees on ornamental horticulture and glass house culture.

Harold Prickett, Prickett's Nursery, Santa Rosa, chairman of the safety committee, told of the cooperation of the chapters in devoting one meeting each year to safety education and urged continuance of the program. He applauded the assistance given in safety posters and speakers made available through the state compensation insurance fund.

Jack McDonnell, McDonnell Nursery, Oakland, chairman of the publicity committee, urged expansion of the program to include a mat service to illustrate feature subjects on the association's release schedule and the addition of short-filler subjects, both of which have been requested by the newspapers now using the service.

J. Awdry Armstrong, Armstrong Nurseries, Ontario, chairman of the grades and standards committee, explained the necessity of bringing the agricultural code up to date. In its present form the code is not enforceable and needs a new set of grades and standards for fruit trees and roses. Present regulations are too complex in these fields. The committee saw no reason to set up new grades for ornamentals, but saw a need for enforcement of labeling regulations. Mr. Armstrong suggested that a new set of regulations be reported to the director of agriculture for the purpose of holding a hearing, then given to the legislature for a supporting act of legislation. He recommended that the act be enforced by the county agricultural commissioners and provide a section enabling prosecution for deception along the lines now in effect with the federal trade commission.

The legislative committee, through John Edwards, John Edwards Nursery, Palo Alto, chairman, recommended action be taken against production of nursery stock by the division of natural resources, forestry department, which is currently producing thousands of plants for the division of highways.

Government Competition

Of special interest to the members was the report of Clyde H. Stocking, San Jose, president of the American Association of Nurserymen, Thursday morning. After explaining the importance of belonging to a state and national association, he told of the A. A. N.'s fight to keep government out of the nursery business. Only this year the appropriations committee in Congress refused money for nurseries; so most of them were closed up, he said. But last month, he continued, the problem appeared again.

Two trade members heard indirectly of a meeting of foresters, both state and national, to be held at Fort Collins, Colo., for the great plains area, the purpose being to lay plans for meeting anticipated needs of the conservation reserve portion of the soil bank program. The nurserymen attended the meeting.

It was announced that $4,000,000 was available from the soil bank funds for expansion of state nurseries. It was also reported that a 70-acre nursery for the production of conifers exclusively is already under construction at Fort Collins.

Mr. Stocking reported that after consulting with the Washington office, he appointed a committee, which met August 8 to formulate

[Continued on page 80]

The coveted baseball trophy awarded each year at the C. A. N. convention passes into the outstretched hands of James Gibbs, representing the South team, winning for the first time. Esler Johnson made the presentation on behalf of his firm, Neil A. Maclean Co.

Advertising and Urea Fertilizer Topics at Louisiana Convention

By James A. Foret

George Johnson, Poole Bros. Nursery, Lecompte, La., was elected president of the Louisiana Association of Nurserymen at the group's annual convention held in the Blackham Coliseum on the campus of the Southwestern Louisiana Institute, Lafayette, La., September 13 to 16. Elected also were Floyd McKee, McKee's Nursery, Covington, first vice-president; W. T. Lambright, Lambright Nursery, Shreveport, second vice-president, and Oliver A. Danyow, Stoutes Nursery, Youngsville, treasurer.

Registrations for the convention numbered 207 and included the presidents of the Texas Association of Nurserymen, Arkansas State Nurserymen's Association, Mississippi Florists' and Nurserymen's Association, and C. J. Lauden, Tyler, Tex., director for region V of the American Association of Nurserymen. E. Mouton Huval's Nursery, Broussard, was general chairman of the convention.

Blackham Coliseum was filled to capacity with 58 exhibits by wholesale growers and members of allied trades. Winners of awards for exhibits were: Casadaban's Nurseries, Ahita Springs, first; Huval's Nursery, Broussard, second, and Grandview Nursery, Youngsville, third.

J. O. Lambert Honored

Honoree of this convention was J. O. Lambert, Lambert Landscape Co., Shreveport. Mr. Lambert was cited "in honor of his accomplishments and because of his high regard for ethical principles in the nursery and landscape industry."

The annual A. A. N. breakfast was held at the Evangeline hotel the morning of September 15, with C. J. Lauden in charge. The major topic discussed was the necessity of appointing a committee to meet with the Louisiana highway commission to discuss plant materials required for functional use in the federal highway program. Mr. Lauden pointed out how the Texas Association of Nurserymen had succeeded with such a meeting and members are now able to plan to meet the demands of anticipated new highway construction.

The opening business session was held in the Coliseum arena the afternoon of September 14, at which time committee reports were heard.

Dr. W. W. Rennie, of the polychemicals department of E. I. du Pont de Nemours & Co., Wilmington, Del., discussed "Application of Methylene Urea to Ornamentals" on the second day's program. Nurserymen of the deep south have advantages they are overlooking, though they cannot afford to do so, Dr. Rennie said in his opening comments. A long growing season, access to water and adequate farm labor are factors that should permit the local growers to outgrow any other section of the country, he continued. He mentioned the trend toward container growing in the larger nursery stock producing states of the middle west.

Large stores sell more stock because they have more people going through them, Mr. Rennie stated. The retail nurseryman must offer something that will attract the public to his place; expert advice and additional services are good inducements. Instead of cutting prices to attract the public, nurserymen should advertise more; then they will come out much better financially at the end of the year. He recommended that the average nurseryman spend at least 4 per cent of his gross income on advertising.

Long-Lasting Fertilizer

Dr. Rennie stated that the advantages of a long-lasting nitrogenous fertilizer are that plants utilize nitrogen more efficiently and the cost of labor is greatly reduced, since one application lasts about six months.

Methylene urea (Uramite) fits the growth curve of most plants nicely, stated Dr. Rennie. The fact that Uramite must be converted to nitrate nitrogen before plants can use it makes it safe, with little danger of burning plants. At a pH of 6.1, nitrification takes place more rapidly than at higher or lower pH readings. In general, optimum plant growth takes place at this pH, he continued.

At optimum soil moisture percentages, nitrification of Uramite is also at an optimum rate; however, some nitrification occurs at lower and higher levels of moisture. The temperature of the soil has the same effects on the nitrification of Uramite as on the growth of plants. The pres-

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New officers of the Louisiana Association of Nurserymen, left to right, Earl Vallot, Grandview Nursery, Youngsville, board member; Oliver Danyow, Stoutes Nursery, Youngsville; treasurer; George Johnson, Poole Bros. Nursery, Lecompte, president; E. A. Chamberlain, Chamberlain's Nursery, Lecompte, board member, and A. Guidry, Guidry's Nursery, Parks, board member.

Officers of the Montana-Wyoming Nurserymen's Association, left to right, front row, James Caras, Jr., Missoula, Mont., president; Morris Morgensen, Casper, Wyo., vice-president; back row, Harry N. Warburton, Billings, Mont., retiring president, and Russell Dunnington, Lewiston, Mont., secretary-treasurer.

Montana-Wyoming Hold Joint Nursery and Turf Meeting

By Don Langhor, Jr.

Nurserymen and turfmen of Montana and Wyoming gathered at Billings, Mont., September 24 and 25 for a joint meeting of their respective trade groups, the Montana-Wyoming Nurserymen's Association and the Montana-Wyoming Turf Association. It was the first joint meeting of the two groups. The turfmen held their program Monday, and the nurserymen met Tuesday. Many of the members attended both sessions.

The Turf Penthouse (no connection except in name) was the setting for both programs. Monday's meeting started with a discussion of "Fertilizers for Lawns," by Jesse Green, Bozeman, agricultural chemist for the Anaconda Mining Co. Mr. Green stressed the importance of the basic principles of growing lawn grasses, which include the preparation of the soil bed and the addition of humus and manure. He pointed out that one of the elements often neglected is adequate water. Nitrogen, phosphate and potash, needed for any crop, are especially important for grasses, which have a heavy root system and top growth.

The second speaker Monday was Eugene E. Barnard, of the horticulture department of Montana State College, Bozeman. He discussed "Weed Control Problems in Turf." Mr. Barnard pointed out that clean maintenance is basic in controlling weeds in lawns, adding that the first step is to prevent weeds from getting a start and chemicals should be used more as a last resort. He outlined use of the common weed-control chemicals, as well as new chemicals and those that are still in development. Montana State College is preparing a bulletin, "Montana Weed Control," which will be available shortly.

At a short business session, turfmen re-elected Tom Lease, Lease Landscape Service, Great Falls, Mont., as president. Leonard Yager, extension horticulturist of Montana State College, was re-elected vice-president, and Harold Babcock, superintendent of grounds at North Montana College, Havre, was elected secretary-treasurer. Duane Anderson, Powell, Wyo., and Nick Poncelet, Great Falls, Mont., were named to the board of directors. William Hawley, Fort Peck, Mont., and Walter Morgensen, Casper, Wyo., are holdover board members. A total of 33 registered for the meeting.

An open house at President Harry Warburton's Billings Nursery concluded the first day. Locally grown cantaloupe was served, and many visitors went on tours of the nursery's growing areas.

A banquet Monday evening at the Turf Penthouse was well attended. Included in the program was the American Association of Nurserymen's motion picture, "Landscape for Living." Mrs. Robert Hamilton, immediate past president of the Montana Federation of Garden Clubs, was guest speaker. Her talk, "Montana Natives," was illustrated by an excellent collection of slides she had taken of Montana plant materials growing in her own yard.

Tuesday morning's registration of nurserymen brought that organization's total to 15 members and five associate members. The associates represented wholesale nurseries from out of the two states and trade suppliers from within the area. The members were pleased to have this additional interest in the still young association.

Nurserymen Elect

New officers elected were: President, James S. Caras, Jr., Garden City Floral Co., Missoula; vice-president, Morris Morgensen, Morgensen Nursery, Casper, Wyo., and secretary-treasurer, Russell Dunnington, Dunnington Greenhouses & Nursery, Lewiston, Mont.

Duane Anderson, Powell, Wyo., presented a talk, illustrated with slides, entitled "Perennials for the Mountain States." He discussed methods of propagation that had been successful. He then asked for group discussion, which resulted in additions to the list of plants and more material on propagation and use of containers for spring sales. Field culture and methods of wintering field stock were brought out in this interesting discussion.

After a coffee break, Walter Morgensen related his experiences with "Container-Grown Nursery Stock." Growing in containers is new to this area, and Mr. Morgensen's experience over the past several years interested the group. He now handles a large part of his stock in containers and predicts a bright future for this method through the entire middle west. He said that in tours into Colorado and Nebraska he observed more nurserymen, wholesale and retail alike, were turning to this method. This is gratifying, because some of the west coast stock brought into colder climates has been of unsuitable varieties or in too soft a condition to survive. Much of it has been handled through supermar-

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Kansas Nurserymen Meet at Ottawa

Merchandising, Tree Diseases and Turf Grasses Discussed

By John J. Pinney

About 80 persons from four states, a number somewhat larger than usual, registered for the annual convention of the Kansas Association of Nurserymen, held at Ottawa September 13 and 14 with the Willis Nursery Co. as host. A program devoted principally to the subject of merchandiisng proved to be of unusual interest.

Elected to the presidency for the coming year was Ralph Johnston, Ralph's Nursery & Garden Shop, Kansas City, Kan. Howard Doman, Willis Nursery Co., Ottawa, Kan., was named vice-president, and Dr. Ray Keen, department of horticulture, Kansas State College, Manhattan, was re-elected secretary-treasurer. Joe Brady, Brady Nurseries, Wichita, was elected to the board of directors.

Activities began the evening of September 13 with a barbecue provided by the Willis Nursery Co., served buffet style at the firm's greenhouses on U. S. Highway 59, one mile south of the city. The precaution of setting up the tables inside the service building proved unnecessary, because the weather was ideal. The informality of the occasion put everyone at ease, and many stayed to visit until late in the evening. Tours of the Willis Nursery Co. fields were conducted next morning before the meeting for those who cared to go.

President Charles Nelson, Charles Nelson & Son Nurseries, McPherson, called the meeting to order in an air-conditioned room in the North American hotel. The formal program began with a report on oak wilt and elm diseases and their control by Dr. Clark Rogerson, plant pathologist, Kansas State College.

Elm Disease Data

The No. 1 elm disease of the country is the Dutch elm disease, which has not been found in Kansas. It was introduced into the eastern part of this country from Europe, in 1930; has spread westward into Illinois, and is now believed to be in the extreme eastern part of Missouri.

The presence of the disease is difficult to detect, because the symptoms are similar to those caused by drought and malnutrition. Positive determination can be made only by examination of the sapwood, which shows a brown discoloration when the disease is present. Cross sections of diseased sapwood show brown dots, while longitudinal sections show a brown discoloration.

The disease is spread by the European bark beetle and the native bark beetle, which pick up spores of the disease from infected trees and carry them to other trees. Healthy, vigorous trees are not attacked by the beetles; consequently the best control is to keep the trees healthy by fertilizing, watering, spraying and removal of deadwood.

Phloem necrosis, another serious disease of elms, found all the way from Georgia to Kansas and from Oklahoma to Nebraska, was first described in 1938, but there is evidence that it is a much older disease. Like the Dutch elm disease, phloem necrosis is difficult to detect because the symptoms resemble those caused by dry weather and starvation.

The leaves become discolored, turn brown, suddenly wilt and die. Death may come slowly, after several years, or it may take place quickly, in a few weeks. Positive symptoms consist of a butterscotch discoloration in the region of the inner bark and a faint odor of wintergreen.

Some strains of elms have proved resistant to these elm diseases. The Christine Buisman elm, a selection of the European elm, Ulmus carpinifolia, has proved highly resistant to both Dutch elm disease and phloem necrosis.

Dr. Rogerson pointed out that disease alone does not account for the large loss in elms in Kansas. Drought has weakened many of the trees, making them susceptible to injury from diseases and insects.

Oak Wilt

"In the United States the oaks suffer from only one major disease, oak wilt," said Dr. Rogerson. It is a fungous disease first discovered in Wisconsin in 1941, but is now known to be present in 17 states from North Carolina to Nebraska.

In the red, pin, black and shingle

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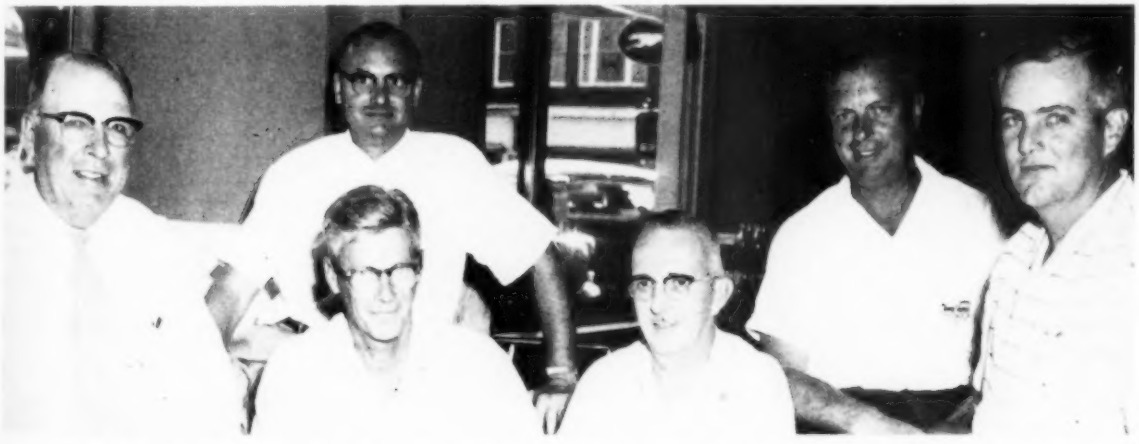

Officers of the Kansas Association of Nurserymen, left to right, Charles R. Nelson, McPherson, immediate past president; Ralph Johnston, Kansas City, newly elected president; Ray Keen, Manhattan, secretary-treasurer (back of Ralph Johnston); Howard Doman, Ottawa, vice-president; Robert E. McHenry, Wichita, director, and Joseph Brady, Wichita, director.

Tips for Better Landscapes

Gardens in the Shade: Part II

By Clarence E. Lewis

Long Island Agricultural and Technical Institute, L. I., N. Y.

About the only time it becomes difficult to develop a garden in the shade is when an attempt is made to set plants in competition with the shallow and overly greedy roots of some of the maples or any other trees whose roots are too domineering. Shrubs or perennials may grow here for a short period but decide in time that there must be an easier way to survive and so leave the show to the trees with the more vigorous roots.

The general feeling is that the soil in shaded wooded areas is always deep and rich with humus, but this is not always true, for it may be a rather thin layer of rooted leaves and branches mixed with two or three inches of soil. Underneath this may be sand or gravel. If this proves to be the case, then humus must be liberally added and well worked into the soil before planting begins.

If drainage is a problem it is a good idea to discover this before the job is completed, because a garden that does not readily remove water is not only undesirable for growing most plants but objectionable to those who look for enjoyment here. Tile and other means of providing good runoff can be easily provided before plants are set. If there is a doubt, remember that in a shaded garden adequate drainage is doubly important, since the drying operation is a much longer process than when the warmth of the sun plays its part.

Path Material

What about paths in a shaded garden? Certainly they are desirable in instances where they are in constant use, but even here there are materials less desirable than others. If flagstones are used they should not be set close to one another but employed as steppingstones in not too regulated a path. I doubt that bluestone has a place in such a garden, even if the owner is in the business.

Such materials as wood chips (not too coarse), tanbark and pine needles can make an interesting woodland effect, but such items have to be added to from year to year. Old brick can be made effective when it is used so that the edges feather into the lawn or nearby area, and the width of the path is not the same throughout. Old brick is particularly desirable if the home or nearby terrace is composed of the same material. Straight edges should be avoided unless there is a certain amount of formality present.

Occasionally an old boulder can be added, if the garden is not flat, and it may be particularly in keeping if ferns are used to make it seem at home. Just a boulder with no garnishing is not pleasing; the stone must look as though it enjoyed the situation. Such simple additions may prove to be better suited than the most expensive of features, although the boulder will not be inexpensive by the time the trucking bill is cared for—and the stone must be placed in the early stages of the garden development.

Ferns that enjoy a shaded environment are Christmas fern (Polystichum acrostichoides), which is one of the darker green types and adaptable to many places because it does not become too large; the American maidenhair fern (Adiantum pedatum), with its unique but delicate apperaance; the sturdy leather wood fern (Dryopteris marginalis); the sensitive fern (Onoclea sensibilis); the common hay-scented fern (Dennstaedia punctilobula), and the two strong and large-growing ferns, interrupted fern (Osmunda claytonia) and cinnamon fern (Osmunda cinnamomea). Ferns add a touch of real woodland to the garden, no matter what its size may be.

There are many wild flowers that do well in the shade, and some should be in such a location to grow well after being transplanted from the wild. Trailing arbutus (Epigaea repens) often becomes difficult, as do partridgeberry (Mitchella repens) and wintergreen (Gaultheria procumbens). Many others are adaptable to these conditions and deserve the privilege of being considered—Canada violets; bloodroot; false lily of the valley; bluet (Houstonia caerulea), and the good woodland ground cover, bunchberry (Cornus canadensis), which has a leaf similar to the false lily of the valley and combines well with it in deep shade. Other low-growing woodland types which are not easy to obtain but worth a good search are sharplobe hepatica (Hepatica acutiloba), Oconee-bells (Shortia galacifolia), and foamflower (Tiarella cordifolia).

It is difficult to conceive of a shaded garden without finding a suitable location for lily of the valley (Convallaria majalis), trilliums in variety and even possibly Christmas rose (Helleborus niger). Shade pro-

Left—The spicebush presents little yellow powderpuff flowers in early spring and enjoys the seclusion and shade of a moist woodland. Right—The epimediums make excellent ground covers in deep or partial shade and have leaves that are a real, fresh green, sometimes with tints of orange.

vides no problem for the ground covers, carpet bugle (Ajuga reptans) and Geneva bugle (Ajuga genevensis), and is equally enjoyed by European ginger (Asarum europaeum), meadow anemone, heartleaf and white wood asters (Aster cordifolius and divaricatus), spotted geranium (Geranium maculatum), galax, moneywort (Lysimachia nummularia) and sweet william phlox (Phlox divaricata). Always interesting but possibly objectionable to some because of its coarse foliage is May apple (Podophyllum peltatum).

Some questionably hardy shrubs may be tried in the protection of such a garden and often prove desirable. For instance, on Long Island and areas comparable to it, Japanese skimmia presents foliage that is a deep rich dark green if grown in dense shade and can produce rich red fruits if the planter uses both staminate and pistillate plants. Dwarf Hooker sarcococca (Sarcococca hookeriana humilis) is a rich reward to anyone who will grow it in deep shade.

Winter daphne (Daphne odora) should also be tried, but may not require quite so much shade. The Suwannee river ligustrum has responded to Long Island conditions if it is afforded protection from both wind and sun. Japanese aucuba will surprise many by being willing and able if protected from the wind and kept out of frost pockets.

Fruiting Plants

Fruiting should not be forgotten when doing this garden of little or no sunlight, even though fruits are not produced in great quantity. The Japanese skimmia, already mentioned; common winterberry, and American or English hollies are most decorative with their red fruits, if staminate plants are placed so that they will pollinate the pistillate (fruiting) types.

In the milder areas, some of the following should be considered for the real shady garden: Coral ardisia (Ardisia crispa), Magellan boxlily (Philesia magellanica), shallon (Gaultheria shallon) and Japanese pittosporum (Pittosporum tobira). The foliage of each is rich and green and doubly so under the influence of shade.

The shaded garden is one of coolness on hot summer days, mystical at night if lights are strategically placed and always intriguing to those who stop to look and then enter.

There are many prennials that grow and flower in the shade of trees and shrubs. The monkshoods, Japanese astilbes, plantain lilies and aquilegias do remarkably well. Others that make themselves at home are Japanese anemone, peach-leaved bellflower, the bleeding hearts, coralbells, acid soil lithodora (Lithodora diffusa), Maltese cross, Virginia bluecreeping polemonium, meadow rue, primroses, common sundrops and many of the lilies that include tiger, Turk's-cap, Canada, coral, speciosum and leopard.

Left—The columbines, long-spurred or otherwise, can enliven a shaded garden. Right—Scillas find no objection to shade as long as there is a reasonable circulation of air. They even grow well in the company of myrtle under such conditions.

Epimediums are well adapted to even deep shade and are welcomed by their owners once they become acquainted with them. The Persian epimedium (Epimedium pinnatum) and the varieties, as well as the long-spurred epimedium (E. macranthum) and its varieties, do a good job tying in some of the perennials and even some of the shrubs, because of the excellent foliage which they have. There is a crisp freshness to the foliage of epimediums that cause people to admire them and wonder how they can be used in their own gardens.

A shrub should occasionally be allowed to come to the edge of the lawn or path so that a variation of depth is created in the shaded border or garden. There should not be a wavy or wiggly effect, and the varying depth of the underplanting will depend upon the length and depth of the planting area. The longer the area, the more varied it can be.

Broad-leaved Evergreens

The heights should not be the same; in other words, a row of shrubs of one height and then a row of the next height is not the best arrangement. It becomes too steplike and not at all the way one finds shrubs grouped in nature. Of the shrubs whose heights rarely exceed four feet, the following are suited to shade. Among the broad-leaved evergreens, coast leucothoe (Leucothoe axillaris) and drooping Leucothoe catesbaei) are excellent possibilities with their arching habits. The wilson rhododendron (R. laetevirens) and mayflower rhododendron (R. racemosum) are two smaller-leaved types that do not object to the shade of other plants. Additional ones are box sand myrtle (Leiophyllum buxifolium); Canby pachistima; some of the new forms of Euonymus fortunei vegetus; skimmia and sarcococca, which have been previously mentioned, and some of the kurume azaleas and selections of Glenn Dale

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The highbush blueberry with its small bell-like flowers may flourish in the shade even though the soil may be moist or quite dry.

Soil Mixtures for Container Stock

By Hugh Steavenson

A down-to-earth experiment to determine the most practical soil mixture for the container-growing operation at Forrest Keeling Nursery, Elsberry, Mo., has shown interesting and, in some instances, startling results.

In recent years the nursery practice has been to shift more to container production. All the cutting-grown liners and many of the seedling transplants are now produced in large-size bands, mostly 3x3x4, rather than as bare-root bedders. The nursery now grows around a quarter-million liners yearly in these large bands. Field survival has been vastly improved as a result, and field planting with little regard to weather at about any time from late spring to midfall is now thought to be safe. Container production for consumer sale is small in this part of the country compared to developments in certain other sections. In tune with the trend, however, the nursery is shifting an increasing proportion of its production from the field to the can. The obvious advantages of a longer selling season, greater certainty of survival of plants sold to the consumer and greater speed with which plants can be handled during the busy selling season cannot be ignored.

Potting Soil

A good potting soil formulated with maximum economy has been one of the nursery's major aims. All the usual ingredients have been used in mixing the growing media, and for the past two years the compost developed by the John Innes Horticultural Institute in England has been used. J. I. compost performed well for the nursery. But it was not inexpensive, and its preparation was laborious and time-consuming. The new synthetic California mixes looked interesting, but again were not inexpensive. In the midwest there is plenty of good dirt under foot. It is not suitable for container culture in its natural state, but it seemed logical to the nursery to use it as a starting base.

In every business, production cost is always the controlling factor. A good grower uses any process which gives the best results at the lowest cost.

Soil Drainage

Undoubtedly, the greatest soil essential is good drainage or aeration. Drainage is much more vital than fertility. Addition of necessary plant food is easy, but adjusting the physical structure of the soil to achieve suitable drainage or aeration is more often than not a difficult task. Ever since man has made a science of plant growing he has been trying to improve soil to suit his purposes, and many of the additives he has learned to use are expensive.

In container production the goals are a good soil mass, which will remain a good growing environment in transplanting, and a healthy root structure to insure best results for the consumer.

To determine what growing medium should be used, it was decided to do some research at the nursery. Identical small plants were placed in containers of four different soil mixtures on April 30. The plants were watched through the summer, and final readings were taken on October 15. The experiment included 10 to 12 plants of each of 22 varieties in each soil type. They were planted in plant bands or metal containers. Plants tested were the following:

American holly; Hatfield yew; Brown's yew; Bulgarian ivy; tuberous begonia; Dunlap strawberry; Pfitzer juniper; red cedar; Euonymus patens; American cranberry; sweet gum; Japanese holly; fire thorn (pyracantha coccineal) Austrian pine; Golden Charm rose; red-leaved Japanese barberry; silk tree (mimosa); Amur honeysuckle; heckrotti honeysuckle; Chinese lilac, and Hopa crab.

American holly in different soil mixtures. In the subsoil-Krilium mixture, fibrous roots extended through the soil; roots in the John Innes mixture were sparser and heavier and developed along the sides of the plant band.

The purpose of the nursery was to check growth in B-horizon soil, the ordinary local subsoil, mixed with recommended amounts of chemical soil conditioner, against growth in three well-established and approved soil mixtures. To two of these mixtures Krilium soil conditioner was added, while the highly recommended John Innes potting compost was used in its original formulation with no soil conditioner.

The formulae and costs were as shown in the accompanying table.

The surprising result is that the clay subsoil treated with Krilium by and large showed survival and growth patterns equal or superior to those obtained in any other soil mixture. The patterns were especially pronounced with those plants which require particularly good drainage.

Soil Shrinkage

Another obvious result was the difference in compaction and shrinkage. The clay subsoil treated with Krilium did not shrink. It maintained its original position in the

COST OF SOIL ADDITIVES FOR CUBIC YARD OF POTTING MIXTURE

Type of potting mixture	Krilium (Loamaker)	Peat	Sand	John Innes base fertilizer	Soil steriliz-ation	Total cost
SOIL No. 1 (subsoil)	1 lb. $1.80	——	——	5 lbs. 20 cents	——	$2.00
SOIL No. 2 (topsoil)	1 lb. 1.80	——	——	5 lbs. 20 cents	1 cu. yd. 46 cents	2.46
SOIL No. 3 (tailored)	¾ lb. 1.35	4¼ cu. ft. $1.85	2⅞ cu. ft. 41 cents	5 lbs. 20 cents	20 cu. ft. 36 cents	4.17
SOIL No. 4 (John Innes potting compost)	——	6¾ cu. ft. $2.94	4½ cu. ft. 65 cents	5 lbs. 20 cents	15¾ cu. ft. 28 cents	4.07

cans and plant bands and did not pull away from the sides of the containers. The greatest shrinkage was apparent in the John Innes compost. The mixtures treated with Krilium and containing topsoils showed some shrinkage, indicating that the greater the clay content, the more effective is the chemical conditioner in minimizing shrinkage.

Shrinkage is an important factor, for it indicates a compaction of the soil, a moving together of particles, which blocks penetration of water and air through the soil to the roots. When gaps are formed between the soil and the container, much of the water will simply run through the crevice to the bottom and be of no benefit to the plant. The compacted, shrunken potting compost in the larger cans took on a slick, heavy appearance, while the subsoil treated with Krilium retained its crumbly surface.

General health, color and height of the plants in the clay subsoil were equal to and in many cases were better than those qualities in the plants grown in other media. In cases of equal results, subsoil treated with Krilium showed economic advantages.

American Holly Results

In the case of the American holly plants, root structures told an interesting story. In the clay subsoil, the roots were fibrous and numerous, spreading in all directions through all sections of the soil. Especially in the J. I. compost (soil No. 4) the tendency of the roots was to thicken and be less numerous. They were sparse through the interior of the soil ball, and they grew toward the walls of the container, clinging to the outer surface of the ball.

An outstanding difference was noted in the height of the plants in the different media. The average small round-leaved holly plant grown in the treated clay subsoil was two and one-half inches higher than that grown in the treated topsoil; differences were not so great between soil No. 2 and soil No. 3, and plants in clay subsoil were three and one-quarter inches higher than those in the special potting compost. Comparable differences were found in many of the other varieties studied.

The experiment with tuberous-rooted begonias indicated that organic matter as well as chemical conditioning is desirable in soil for this species. Plants in the topsoil-organic-Krilium mixture were largest; all soils treated with Krilium yielded strong, blooming plants. Of the plants in the J. I. compost, 90 per cent died, and dead fibers appeared on those remaining, but growth reestablished itself. Height of only an inch or two was attained at the end of the 5½-month experiment.

As a result of the experiment, a new method of soil preparation for potting operations has been begun. Peat, the most expensive additive formerly used, has been dispensed with entirely. A modified procedure, essentially dependent on Krilium to give the needed soil structure, has been developed.

A soil plot 50x200 feet has been treated with Krilium to a depth of 12 inches (370 cubic yards), which will take care of the nursery's potting needs this spring. This plot is the only potting soil which will be used. It happened to be a piece of good turf land, but it was found that the soil mixed with Krilium did not make too much difference; all the local soil had a clay content high enough to make effective use of treatment with Krilium.

John Innes base fertilizer, consisting of horn-and-hoof meal, super phosphate and potash, and 20 cubic yards of rotted manure have been added. The manure was added chiefly for its plant food value. It is felt that its slow breakdown and gradual release of nutrients to the plant extend the initial enrichment of the soil. The manure is a good organic additive, and its structure-improving properties serve as a supplement to those of the chemical conditioner. The plot has been sterilized with allyl alcohol drench to eliminate weed seeds.

The nursery has saved money on soil ingredients and has achieved a superior mixture. There is also an added economic advantage in ease of preparation and use. The soil was completely field-mixed with regular farm equipment already on hand. A disk plow and spring-tooth harrow were used. With complete field mixing, a soil-mixing shed and soil shredders no longer had to be used. The soil will be loaded from the field into a dump truck with a tractor scoop and will then be taken directly to the potting table without further handling.

Soil and other growing media are only one aspect of container production. But it is a vital aspect and can spell the difference between failure and success. By using a chemical soil conditioner to transform clay into an aggregate that creates and maintains perfect aeration and drainage the nursery believes it has a winner in its new potting mixture.

Hatfield yews grown in different soil mixtures. Note difference in height. The subsoil-Krilium mixture did not shrink and pull way from the side of the container as did the John Innes compost, as shown at left.

Typical differences in height of a number of small round-leaved holly plants grown in four experimental soils. Plants were 1-year, from rooted cuttings.

Operating a Garden Center

Chapter 20. Keeping Records

By John J. Pinney

You will have to keep records. What records you keep and how you keep them is highly important. Uncle Sam insists on a set of books recording all financial transactions, your income and your expenditures, so that he can collect his share of your net income.

Anyone who starts a new business has the right to choose one of two methods of keeping books and to determine his fiscal year, which need not correspond with the calendar year. It is important that you familiarize yourself with these matters so as to make intelligent choices.

Because of the seasonal nature of the nursery business you should choose your fiscal year with that in mind. In many sections of the country, particularly the north, the period of greatest activity is in the spring, with sales much slower during the rest of the year. In the south, business picks up in the fall and continues until the end of the spring planting season. The summer months usually are the quietest period in all sections.

Setting Fiscal Year

Let us assume that you live in the north and do most of your business in the spring. Assume also that you have chosen the calendar year for your fiscal year, from January 1 to December 31. This means that your income tax report will cover that period. Your greatest income is during the spring months. From then until the next spring your income is at its lowest ebb, but your expenses go right on. In your own mind your season ended with the close of the spring business and the next season has begun. You have begun planning for the next season, possibly placing future orders and even making some expenditures.

Because your fiscal year corresponds with the calendar year, your income tax returns will cover the period from January 1 to December 31, which means that your returns will include the last half of one season and the first half of the next. This probably will make no difference in the amount of tax that you will have to pay, but it does not present a true profit picture.

When one season is ended, say on June 1, you are interested in knowing how much profit you have made during the past season. But, because your fiscal year runs for six months more, your books will not be closed until the middle of the next season. Of course you can always figure just where you stand at any time, but it would be much more convenient and consistent to have your fiscal year correspond to your business year. In the hypothetical case described here this would be from June 1 to May 31. After you have once chosen your fiscal year, the Treasury Department is very reluctant to let you change it.

		SUPPLY					
Source	Date	5 - 6'	Cost	4 - 5'	Cost	3 - 4'	Cost
Smith x	8/1	3/4 20	4.00				
Brown x	10/3			2/10 30	3.00	2/10 50	2.00
Own Stock		10					
Total Stock		30		30		50	
On hand	4/1	15	INVENTORY	25		46	
On hand	5/1	8		20		30	
On hand	7/1	0		5		10	
Total Sales		30		25		40	
CORNUS FLORIDA							
FORSYTHIA SPRING GLORY							
HONEYSUCKLE ROSEA							

Card A—Complete Seasonal Record on Purchases and Sales of a Nursery Item

		STOCK								
		No.1			No.1½					
Source	Date	Bo't.	Rec'd.	Cost	Bo't.	Rec'd.	Cost	Bo't.	Rec'd.	Cost
Smith Nur.	10/3	100	100	.60	50	46	.45			
Total Stock			100			46				
		12	39	SALES		21	40			
		18	40	50	3	24	45			
		19	41	62	6	25	46			
		20	43	72	18	26				
		26	44		19	30				
		38	48		20	32				
Total Sales				72			46			
RED RADIANCE										
TALISMAN										
YELLOW SASTAGO										

Card B—Perpetual Inventory Record That Gives Immediate Data on Stock Supply

Inventory Consideration

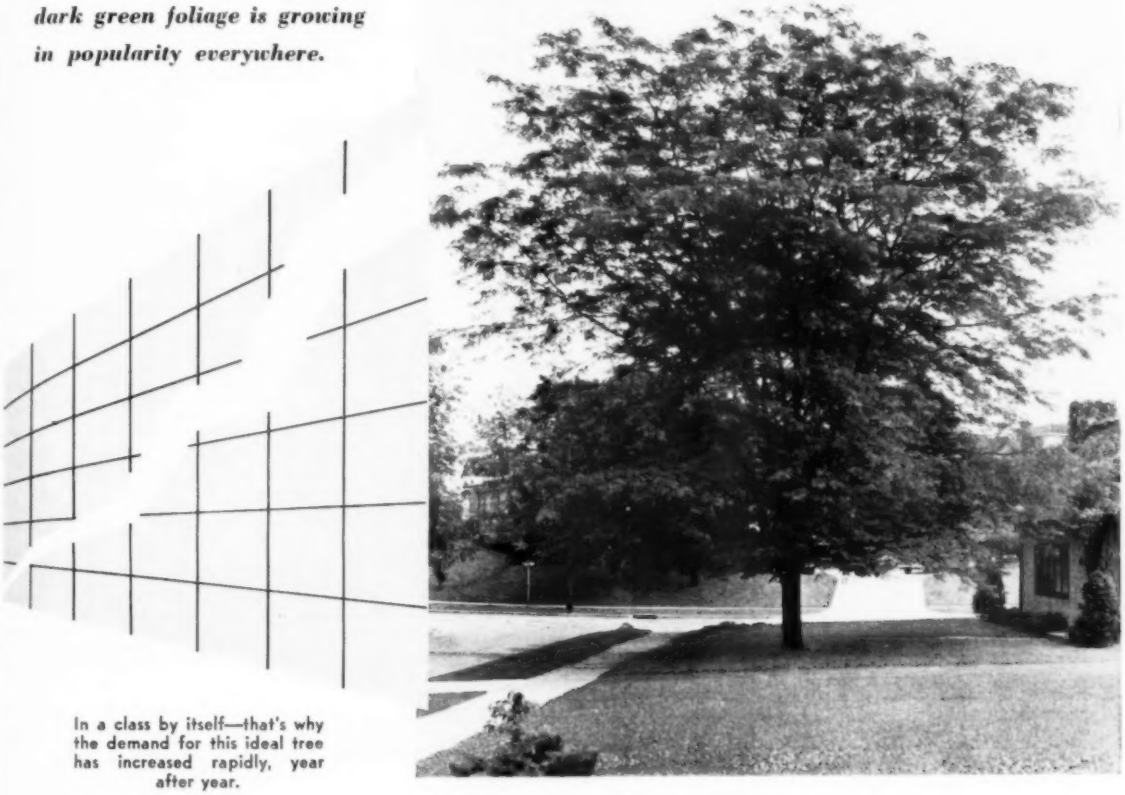
There is another important consideration in choosing your fiscal year. In the inventory or accrual system of keeping books, the value of the inventory on hand is used in figuring your profits. It can readily be seen that the larger your inventory, the greater the profit your books are likely to show. Therefore your best interests might be served by having your fiscal year end when your inventory is at its lowest ebb. Naturally this will be when you have completed one season and before you have begun to stock up for the next.

As stated here there are two approved methods of keeping books: the cash and the accrual. Expressed in the simplest terms, the cash system involves keeping records of all cash transactions—receipts and their sources, as well as all expenditures and their purposes; in other words, only those transactions which have been completed are entered in the books. The inventory is not involved in this system. This method has the advantage of being simple and easy to maintain.

[Continued on page 98]

You're looking at MORAINE LOCUST

This graceful shade tree with dark green foliage is growing in popularity everywhere.



In a class by itself—that's why the demand for this ideal tree has increased rapidly, year after year.

In a few short years nurserymen have seen the one and only Moraine Locust grow into a reigning favorite among shade trees. For these reasons . . .

LUXURIANT, SOLID GREEN FOLIAGE

Long, graceful leaves keep their beautiful dark green color all season long. Light, lacy shade encourages lawn grass growth underneath.

GRACEFUL SHAPE

Grows to a wide-spreading, vase-shaped tree of great beauty. Stately, thornless, seedless.

FAST, HARDY GROWTH

This hardwood, storm-resistant tree grows to a height of 25 to 30 feet in just ten years.

NATIONALLY ADVERTISED

In *Flower Grower*, *Popular Gardening* and *Horticulture*, which has developed a presold market—directs shade tree buyers to you.

Take advantage of this presold market. Get your share of this fast-growing business by stocking more Moraine Locust trees now. Order from one of the licensed propagators listed below.

*Plant Patent No. 836, "Moraine" is the registered trade-mark in both the U. S. and Canada of The Siebenthaler Co., Dayton, O.

MORAINE LOCUST
The aristocrat of shade trees

MORAINE LOCUST NURSERIES

Brookdale-Kingsway, Ltd.
Bowmanville, Ont., Canada

Commercial Nurseries
Decherd, Tenn.

Doty & Doerner, Inc.
Portland 19, Ore.

The Greening Nursery Co.
Monroe, Mich.

Hillenmeyer Nurseries
Lexington, Ky.

Hinsdale Nurseries
Hinsdale, Ill.

Ilgenfritz Nurseries, Inc.
Monroe, Mich.

Jackson & Perkins Co.
Newark, N. Y.

Kelly Bros. Nursery
Dansville, N. Y.

Marshall Nurseries
Arlington, Neb.

A. McGill & Son
Portland, Ore.

Milton Nursery Co.
Milton-Freewater, Ore.

Mount Arbor Nurseries
Shenandoah, Ia.

Princeton Nurseries
Princeton, N. J.

Shenandoah Nurseries
Shenandoah, Ia.

The Siebenthaler Co.
Dayton, O.

Sneed Nursery Co.
Oklahoma City 1, Okla.

The Willis Nursery Co.
Ottawa, Kan.

QUALITY EVERGREENS

BROAD-LEAVED EVERGREENS

Abelia grandiflora
Barberry, julianae
Buxus sempervirens
Cotoneaster decora lactea
Cotoneaster horizontalis
Laurel Cherry
Laurocerasus officianalis (English Laurel)
Elaeagnus fruitlandi
Elaeagnus simoni
Euonymus, small-leaved
Euonymus coloratus
Euonymus patens
Ilex crenata Biloxi
Ilex crenata convexa
Ilex rotundifolia
Ilex cornuta burfordi
Ilex Foster's Hybrid No. 2
Ilex cornuta femina
Ilex glabra
Ilex opaca, seedlings
Ilex opaca Arden
Ilex opaca Croonenburg
Ilex opaca East Palatka
Ilex opaca howardi
Ilex opaca Hume No. 2
Ilex vomitoria
Ilex vomitoria, dwarf
Jasminum floridum
Ligustrum lucidum nana
Ligustrum Suwannee River
Loropetalum chinense
Magnolia glauca
Magnolia grandiflora
Nandina domestica
Photinia serrulata
Viburnum burkwoodi

DECIDUOUS TREES

Cornus florida
Cornus florida rubra
Euonymus alatus compactus
Magnolia nigra
Magnolia rustica rubra
Magnolia soulangeana

CONIFERS

Arborvitae, orientalis Baker
Arborvitae, orientalis Blue Cone
Arborvitae, orientalis Bonita
Arborvitae, orientalis excelsa
Arborvitae, orientalis newarki
Arborvitae, fruitlandi
Arborvitae, American globosa
Arborvitae, American globosa compacta erecta
Arborvitae, Pyramidal American
Arborvitae, Dark Green American
Cypress, Blue Lawson
Juniper, Andorra
Juniper, chinensis procumbens
Juniper, excelsa stricta
Juniper, communis fastigiata
Juniper, hetzi glauca
Juniper, pfitzeriana
Juniper, pfitzeriana compacta
Juniper, pfitzeriana nana
Juniper, virginiana repandens
Juniper, sargenti
Juniper, sabina
Juniper, chinensis Sylvestris
Juniper, sabina vonehron
Juniper, sabina vonehron, sheared globes
Juniper, sabina vonehron, sheared pyramids
Juniper, virginalis
Juniper, virginiana burki
Juniper, virginiana canaerti
Juniper, virginiana Dundee
Pine, Austrian

Price and Quality Guaranteed to Please.

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CARTWRIGHT NURSERIES

COLLIERVILLE, TENN.

ULysses 3-2352

OBITUARY

Manfred Meyberg

Manfred Meyberg, president of Germain's, Inc., Los Angeles, Calif., died at his home September 29, at the age of 70. He had been associated with the widely known seed firm for 52 years and had held many positions in it. Last July he served as chairman of the entertainment committee for the convention of the American Association of Nurserymen at Los Angeles.

A member of a pioneer California family, Mr. Meyberg was educated in the public schools of Los Angeles and from his early youth was associated in the horticultural field. He served as president of the Pacific Seedsmen's Association and the Southern California Horticultural Institute. He held an honorary life membership in the California Seed Association, which he helped to found. He was also a founder and honorary member of the Pacific Seedsmen's Association. For a number of years the general chairman of the California international flower show, in 1955 he received a plaque at a testimonial dinner in recognition of his leadership in staging one of the most successful shows.

Mr. Meyberg was an honorary member of the Los Angeles County and State Arboretum and a founder and member of the Los Angeles Men's Garden Club. He had also served on the advisory board of the Los Angeles Beautiful committee, formed to plan enhancement of the city's beauty.

John Vermullen, Sr.

John Vermullen, Sr., nurseryman at Bridgeton, N. J., died September 22 at his home. He was born in the Netherlands and came to this country in 1921, being employed by the Koster Nursery, Deerfield, for 25 years. Since 1946 he had operated a nursery in partnership with his sons. Surviving are his widow, Louise Vermullen; a daughter, and two sons, John, Jr., and Jack.

Leonardo Statile

Leonardo Statile, owner of the Springfield Nursery, Springfield, N. J., died September 18 after seven months' illness. He was 63 years old. Born in Italy, Mr. Statile came to this country in 1913 and opened his own nursery in 1922. He was well known for his work in hybridizing azaleas and rhododendrons. Surviv-

POOL CAR SHIPMENTS OF P & D ROSES

We are now booking orders for pool car shipment of these famous Oregon-grown roses for fall delivery to principal eastern and southern points. For latest listings and shipping dates, wire or airmail today.

2 EXTRA SERVICES ... at No Extra Cost

1. **EACH BUSH individually labeled.**
2. **EACH BUSH individually top-tied.**

Two little extras that mean a lot.

EASTERN NURSERYMEN: Contact our Eastern representative, Frank C. Donovan, 130 E. 23rd Street, Euclid, Ohio

ALL P&D ROSES are budded on a "Super Strain" Multiflora Root. This basic improvement in roses is exclusively ours after 20 years of development. It means bigger, better, hardier roses... less loss in handling... and greater customer satisfaction.

AAN

Peterson = Dering
ROSE GROWERS
SCAPPOOSE OREGON

AARS
CHARTER MEMBER

Oregon's Best Source of Good Roses . . *the Finest Anywhere*

EVERGREENS?

HOW ABOUT THESE?

FOR — *ruggedness*
— *hardiness*
— *winter warmth*

FOR — *utility*
— *protection*
— *lasting beauty*

Hardy — Northern Field-Grown
With unrestricted root systems that make for
—sturdiness
—thrift
—abundant feeding fibers
—permanent strength against wind and drought

	Per 100	Per 1000
Abies concolor (White Fir) Symmetrical growth and beautiful bluish foliage. *1 to 3 ins., once transplanted	$ 8.00	$ 64.00
Ajuga reptans rubra (Purple-leaved Bugle) Rich green foliage, blue flower spikes. *1-yr. plants	$ 8.00	$ 64.00
Aucuba japonica nana (Dwarf Aucuba, Female) Dark green leaves. A profusion of bright red berries. *3 to 6 ins., once transplanted	$ 14.00	$112.00
Aucuba japonica variegata (Golddust Aucuba, Female) Leaves dark green splashed with gold. *6 to 9 ins., once transplanted	$ 18.00	$144.00
Sherwood Cerise Azalea Flowers bright, clear cerise, very lovely. *3 to 6 ins., once transplanted	$ 15.00	$120.00
Sherwood Red Azalea Finest, hardy evergreen, blood-red azalea. *3 to 6 ins., once transplanted	$ 15.00	$120.00
Berberis stenophylla erwini (gracilis) Low-growing, gracefully spreading evergreen. *1 to 3 ins., once transplanted	$ 15.00	$120.00
Camellia japonica (Cheerful) Splendid, double and bright red. *3 to 6 ins., once transplanted	$ 22.00	$176.00
Camellia japonica (Pink Perfection) Double, clear pink flowers, perfectly formed. *3 to 6 ins., once transplanted	$ 22.00	$176.00
Chamaecyparis lawsoniana minima glauca (Little Blue Cypress) A beautiful true dwarf, dark and dense, bluish-green foliage. *4 to 6 ins., twice transplanted	$ 35.00	$280.00
Chamaecyparis lawsoniana monumentalis (Cerula) Sky-blue column, magnificent specimen. 5 to 6 ft., three times transplanted, B&B	$225.00	.....

DID YOU KNOW?
That in a large tree less than one per cent of its cells may be living cells.

	Per 100	Per 1000
Chamaecyparis lawsoniana stewarti (Winter Golden Cypress) Stately in habit, with green and gold foliage. 18 to 24 ins., twice transplanted, B.R., near specimen	$ 65.00	.....
Chamaecyparis obtusa nana (Dwarf Hinoki Cypress) A real genuine dwarf having exceedingly dense, heavy foliage. *3 to 4 ins., twice transplanted	$ 25.00	$200.00
Chamaecyparis pisifera filifera nana aurea (Dwarf Golden Thread Cypress) Heavy type. Velvety, dark golden filaments. *6 to 9 ins., once transplanted	$ 20.00	$160.00
Cytisus praecox (Warminister Broom) Graceful, pendulous, profusion of cream flowers. *12 to 18 ins., once transplanted	$ 20.00	$160.00
Cytisus purgens (Provence Broom) Dwarf, hardy, compact. A profusion of yellow flowers. *12 to 18 ins., once transplanted	$ 20.00	$160.00
Daphne mezereum rubra (Red February Daphne) Delightfully fragrant, lilac-purple flowers. *3 to 6 ins., not transplanted	$ 13.00	$104.00
Erica carnea (King George) Low-growing. Completely covered with red flowers. *3 to 6 ins., once transplanted	$ 12.00	$ 96.00
Erica carnea sherwoodi (Sherwood Creeping Heath) Low creeper. Flowers bright carmine-red. *3 to 6 ins., once transplanted	$ 12.00	$ 96.00

ing are his widow, Lucretia; a son, Philip L.; two daughters, and three grandchildren.

Alfred H. Heberle

Alfred H. Heberle, founder of the Heberle Nursery Co., Rochester, N. Y., died September 11, after a long illness. Mr. Heberle was 76 years old.

He was nationally known for his development of the Rochester peach, noted for its early ripening. A native of Irondequoit, Mr. Heberle established his nursery 55 years ago, retiring in 1941 because of illness, and disposing of his fruit farms at Penfield and Red Hook. The nursery is now operated by his son, Arthur P. J. Heberle.

Mr. Heberle was a former member of the American Association of Nurserymen, Western New York Nurserymen's Association and the New York State Horticultural Society. Besides his son Arthur, he leaves his widow, Anna C. Heberle; two other sons; three daughters; two brothers, and two sisters.

Percy C. Blatchford

Percy C. Blatchford, nurseryman at North Rehoboth, Mass., near Attleboro, died September 3 of a heart attack at his home. He continued active in his 74th year, despite the fact he had been under medical care for a long time. Born March 10, 1882, Mr. Blatchford had been a resident of North Rehoboth for 40 years. He is survived by his widow, Nancy A. Blatchford; a daughter; a son, and two sisters.

John Henry Erthal

John Henry Erthal, proprietor of Top of the Hill Nurseries, Dix Hills, N. Y., died at his home August 25, at the age of 55 years. He is survived by his mother, Mrs. Mary Falls Erthal; his widow, Beatrice C. Erthal; two daughters; two sisters, and a brother.

Evelyn L. Cavenee

Evelyn L. Cavenee, owner of the Mission Valley Nursery, San Diego, Calif., died after surgery August 9. She was 63 years old.

Mrs. Cavenee had purchased the Benard Nursery in 1947 and developed it into one of the largest nurs-

Euonymus radicans coloratus (Purple-leaved Winter Creeper)
A trailing evergreen, very hardy. Per 100 Per 1000
*12 to 18 ins., once transplanted..... $ 18.00 $144.00

Gaultheria procumbens (Wintergreen)
Fine foliage, pink flowers, red berries, superb.
*2-yr., once transplanted..... $ 10.00 $ 80.00

Hedera helix arborescens (Bush English Ivy)
Reaches a height of 2½ ft. and spread of 4 ft.
*3 to 6 ins., once transplanted..... $ 15.00 $120.00

Juniperus chinensis sargenti (Sargent Juniper)
Bluish-green, low-growing, spreading juniper.
12 to 15 ins., twice transplanted, B&B..... $102.00 .....

Juniperus horizontalis glauca (Blue Creeping Juniper)
Steel-blue, cypress-like foliage.
15 to 18 ins., twice transplanted, B&B..... $122.00 .....

Juniperus horizontalis plumosa (Andorra Juniper)
Deep green, changing to a rich purple bronze.
24 to 30 ins., twice transplanted, B&B..... $182.00 .....

Juniperus scopulorum (Rocky Mountain Juniper)
Foliage, fine; color, bluish-green or silvery.
*6 to 9 ins., not transplanted..... $ 12.00 $ 96.00

Juniperus squamata meyeri (Meyer Juniper)
Plume-like branches, deep blue color.
*9 to 12 ins., once transplanted..... $ 25.00 $200.00

Juniperus virginiana (Red Cedar)
Dense green, darkening to a rich bronze in winter.
*6 to 9 ins., not transplanted..... $ 11.00 $ 88.00

Juniperus virginiana tripartita (Fountain Juniper)
Semi-upright, spreading, dense foliage, lovely.
24 to 30 ins., twice transplanted, B&B..... $182.00 .....

Kalmia latifolia (Mountain Laurel)
Leaves glossy green, flowers white to deep pink.
*6 to 9 ins., once transplanted..... $ 20.00 $160.00

Ledum columbianum (Labrador Tea)
Splendid plant with a great future.
*9 to 12 ins., once transplanted..... $ 25.00 $200.00

Mahonia aquifolium (Oregon Grape)
An ornate little evergreen shrub.
*1 to 3 ins., not transplanted..... $ 7.00 $ 56.00
*3 to 6 ins., not transplanted..... 10.00 80.00
*3 to 6 ins., once transplanted..... 12.00 96.00

Pachysandra terminalis (Japanese Spurge)
Of Japanese origin, is evergreen and grows in dense masses.
*2-yr. plants..... $ 10.00 $ 80.00

Picea engelmanni (Engelmann Spruce)
Dense, slender. Bluish-green foliage.
*6 to 9 ins., once transplanted..... $ 11.00 $ 88.00

Picea excelsa (Norway Spruce)
One of the best known and one of the hardiest of conifers.
15 to 18 ins., once transplanted, B.R..... $ 20.00 $160.00

Picea excelsa mucronata (Dwarf Norway Spruce)
Genuine dwarf. Dense, dark green. One of the best.
9 to 12 ins., twice transplanted, B&B..... $102.00 .....

Picea glauca densata (Black Hills Spruce)
A handsome, hardy tree of symmetrical habit of growth.
*3 to 6 ins., not transplanted..... $ 5.00 $ 40.00

Picea pungens (Colorado Spruce) (Green)
One of the most desirable of the spruces. Per 100 Per 1000
*6 to 9 ins., once transplanted..... $ 15.00 $120.00

Pinus griffithi (Griffith Pine)
Sometimes called the blue pine. Rare.
*6 to 9 ins., not transplanted..... $ 11.00 $ 88.00

Pinus jeffreyi (Jeffrey Pine)
A rather open picturesque, spire-shaped conifer native of Oregon.
9 to 12 ins., once transplanted..... $ 18.00 $144.00

Pinus mughus compacta (Mugho Pine)
A dense, stout, dwarf evergreen.
6 to 9 ins., twice transplanted, B.R., near specimen..... $ 49.00 .....

Pseudotsuga douglasi (Douglas Fir)
Colorado silver-gray strain, a truly stately tree.
12 to 18 ins., once transplanted, B.R..... $ 20.00 $160.00

Taxus baccata (English Yew)
This is the old favorite of English gardens.
12 to 15 ins., twice transplanted, B.R., hedge grade..... $ 61.00 .....

Taxus baccata fastigiata aurea (Golden Irish Yew)
Golden form of the well-known Irish Yew.
*9 to 12 ins., once transplanted..... $ 28.00 $224.00

Taxus cuspidata (Japanese Yew)
One of the most satisfactory of dwarf evergreens. Hardy.
12 to 15 ins., twice transplanted, B.R., hedge grade..... $ 65.00 .....

Thuja occidentalis (American Arborvitae)
Native New Brunswick and Manitoba to North Carolina.
18 to 24 ins., twice transplanted, B.R., hedge grade..... $ 49.00 .....
2 to 3 ft., twice transplanted, B.R., hedge grade..... 73.00 .....
2 to 3 ft., twice transplanted, B&B..... 102.00 .....
3 to 4 ft., twice transplanted, B&B..... 142.00 .....

Thuja occidentalis pyramidalis (American Pyramidal Arborvitae)
A most desirable arborvitae of narrow columnar growth, dense.
5 to 6 ft., twice transplanted, B&B..... $223.00 .....

Tsuga mertensiana (Mountain Hemlock)
Magnificent conifer native to rugged areas.
*9 to 12 ins., once transplanted..... $ 22.00 $176.00
15 to 18 ins., three times transplanted, B&B 102.00 .....

Vaccinium ovatum (Evergreen Huckleberry)
Evergreen shrub of surpassing merit.
*1 to 3 ins., once transplanted..... $ 12.00 $ 96.00

SHERWOOD PAYS THE COST
The prices here quoted include expert packing and delivery of lining-out stock to you, **all shipping charges prepaid** to any point in the United States, Canada and Alaska. Lining-out stock is marked with an asterisk*. The prices on B. R. stock are F.O.B. Gresham. No packing charge on any stock.
25 at 100 rate 250 at 1000 rate

SHERWOOD NURSERY CO.
Evergreens - PROPAGATORS AND GROWERS WHOLESALE
CORBETT, OREGON
Wholesale list available — trade only.
(It contains complete description)

eries at San Diego. Manager of the nursery is Charles Dibbs, newly elected president of the San Diego chapter of the California Association of Nurserymen. Mrs. Cavanee is survived by her husband, Clark M. Cavenee, and a daughter.

Haruyuki Kawabe

Haruyuki (Harry) Kawabe, 52-year-old Menlo Park nursery owner, died at his home after an extended illness. He had operated the Kawabe Nursery for the past nine years. The nursery specialized in bonsai trees and designed many of the peninsula's larger Japanese gardens. Mr. Kawabe was a native of Japan and is survived by his widow, Muneko; a daughter; a grandson, and his father.

W. B. B.

LONG ISLAND MERGER

Beginning January 1, 1957, Miller's Pleasant Farms, Woodbury, Long Island, will be absorbed and operated by Garden World, Inc., Flushing, Long Island, under the name of Garden World Pleasant Farms, Inc.

Employees now working for Miller's Pleasant Farms will continue with the new organization without interruption. Jobbers, manufacturers and growers supplying Miller's Pleasant Farms will continue to supply the new organization on the same basic terms. This organization has grown from a comparative infant to one of the largest and finest garden centers on Long Island.

Harry Raben is president of Garden World, Inc., while Wilfred Miller is the owner of Miller's Pleasant Farms.

FRUIT TREE PROPAGATION

What amounts to a handbook on fruit tree propagation has been issued by the New York state experiment station at Geneva and is now available upon request to the station. Prepared by Karl D. Brase, pomologist at Cornell University and the State University of New York, the bulletin covers the subject from the handling of seeds for rootstock production to budding and grafting and goes into detail on propagation practices followed in the northeastern United States. Directions for making grafting waxes are also included.

SMALL TREES (At Maturity)

For Planting Where Space Is Limited.

	Per 10	Per 100
PINKBUD (Cercis canadensis rosea)		
New; offered now for first time. A **true pink-flowering** strain of the Eastern Redbud. The clear rose-pink flowers are a spectacular improvement over ordinary redbud flowers which are magenta—neither red nor pink. A highly disirable ornamental and small shade tree.		
6 to 8 ft., B&B	$85.00	.....
5 to 6 ft., B&B	65.00	.....
4 to 5 ft., B&B	55.00	.....
3 to 4 ft., B&B	45.00	.....
2 to 3 ft., B&B	35.00	.....
WHITEBUD (Cercis canadensis alba)		
White-flowering form of the Eastern Redbud. A beautiful small tree at all times but especially when in full bloom with a cloud of white flowers. No other tree can give the same effect. These trees have always been scarce and our supply is limited.		
6 to 8 ft., B&B	85.00	.....
5 to 6 ft., B&B	65.00	.....
4 to 5 ft., B&B	55.00	.....
GLOBE LOCUST (Robinia pseudoacacia umbraculifera)		
A splendid small ornamental tree that develops a symmetrical, round, compact top without shearing. Makes a good shade tree when mature. Desirable for planting on streets where larger trees are not practical. Very hardy.		
6-ft. stems	30.00	.....
5-ft. stems	25.00	.....
WASHINGTON HAWTHORN (Crataegus phaenopyrum)		
Slender tree with small leaves that turn brilliant colors in autumn. Large clusters of bright red fruit remaining on branches for a long time. A very desirable species useful for tall screens and hedges, individual specimens or where small trees are needed.		
5 to 6 ft.	32.50	$300.00
4 to 5 ft.	26.50	250.00
3 to 4 ft.	21.00	200.00
GOLDEN-RAIN TREE (Koelreuteria paniculata)		
One of the few ornamental trees that bloom in the summer. Large panicles of bright yellow flowers. Thrives in heat and drought. Picturesque and long-lived.		
5 to 6 ft.	30.00	.....
4 to 5 ft.	22.50	200.00
3 to 4 ft.	16.50	150.00
2 to 3 ft.	12.50	100.00
18 to 24 ins.	7.00	60.00
ROSE ACACIA, Standards (Robinia hispida)		
Moss locust grafted on locust stems to make a small formal tree. Blooms heavily in spring with large clusters of bright pink sweet-pea flowers and occasionally throughout growing season. Desirable for formal planting, lawn specimens or when small trees are needed.		
6-ft. stems	30.00	.....
5-ft. stems	25.00	.....
4-ft. stems	20.00	.....
AMUR MAPLE (Acer ginnala)		
A small shrubby tree that never gets out of bounds. Small, refined foliage. Turns brilliant scarlet in autumn. Hardy north.		
6 to 8 ft.	27.50	250.00
5 to 6 ft.	22.50	200.00
4 to 5 ft.	16.50	150.00
UMBRELLA CATALPA (Catalpa bungei)		
An old-time favorite that is becoming popular again. It requires little room, never grows any taller, can be planted under utility wires and is excellent for formal planting.		
5-ft. stems	22.50	200.00
4-ft. stems	18.00	165.00
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COVER ILLUSTRATION

Carpinus Tschonoski

As in the case of many other plants that come from foreign countries, the date of the first introduction of Carpinus tschonoski, the Yeddo hornbeam, into this country, is not certain. Some plants have come to us from the Orient via European botanic gardens or nurseries. That does not seem to be the case here. W. J. Bean, in his "Trees and Shrubs Hardy in the British Isles," (fourth ed., 1925) believes the introduction of this plant to the Darmstadt Botanic Garden in 1901 to be the first introduction into Europe and Johnson's "Gardener's Dictionary," 1917, gives 1907 as the introduction date for England. Both these references are antedated by the receipt by this section in 1900 of a packet of seeds from Yokohama, Japan, through the New York branch of Suzuki & Iida. C. S. Sargent, writing in 1922 on the first 50 years of the Arnold Arboretum, credits the Arnold Arboretum with having first introduced C. tschonoski into this country but gives no date. Although Alfred Rehder, in "Manual of Cultivated Trees and Shrubs Hardy in North America" (second edition, 1940), does not state to what country the introduction of 1894 refers, the writer feels safe in assuming that Sargent and Rehder refer to the same introduction.

Botanical and horticultural literature bear out observations on the specimens of C. tschonoski growing at the United States plant introduction garden, Glenn Dale, Md. In size and outline the tree strongly resembles another little-known species, C. cordata. They are both a little larger than the native C. caroliniana and about three-fourths the average size of the fairly common C. betulus. The lower branches may be removed to the desired height leaving a single trunk supporting a dense rounded head. The ascending branches give the appearance of a narrower and taller tree, but the tree's slowness of growth keeps it in the 30-foot group for many years. Close examination reveals the dense pubescence on the branchlets which distinguishes this species from the rest of the genus. Another distinguishing character is afforded by the fruit bracts, which are lobed at the base on only one side. The leaves are smaller than those of the other species mentioned and more elongated.

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Taxus baccata repandens	3.00	20.00
Taxus cuspidata capitata	3.00	22.50
Taxus cuspidata F & F compacta	3.00	20.00
Taxus cuspidata densiformis	3.00	20.00
Taxus media browni	3.00	20.00
Taxus media cliftoni	3.00	20.00
Taxus media Halloran	3.00	20.00
Taxus media hatfieldi	3.00	20.00
Taxus media henryi	3.00	20.00
Taxus media hicksi	3.00	20.00
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Taxus media wardi	3.00	20.00

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P. O. BOX 788 **MOUNTAIN VIEW, N. J.**

experienced in transplanting larger trees of the genus has hindered the adoption of this species by the trade. C. tschonoski is readily propagated from seeds, which are listed in catalogs of the larger tree seed firms. Because of its lack of popularity, the genus has not received much attention from pathologists. However, as far as is known this species does not suffer from any major diseases. It is hardy throughout zone 5 and is tolerant of many soils. There seems to be, then, no apparent explanation why C. tschonoski should remain so uncommon over half a century after its introduction. This neat, compact tree could well be recommended for street and lawn planting.

H. H. Fisher

CREECH VISITS JAPAN

A plant explorer of the United States Department of Agriculture is making a trip to Japan and the Ryukyu Islands to investigate and collect plants potentially valuable to ornamental horticulture in the United States. Dr. John L. Creech, in charge of the United States plant introduction garden at Glenn Dale, Md., began his plant-hunting trip October 1 and will return about January 15, 1957. The expedition is sponsored jointly by the agricultural research service of the U. S. D. A. and Longwood Gardens, a unit of the Longwood Foundation, Kennett Square, Pa. It will be a continuation of plant explorations that Dr. Creech made in the same area during the summer of 1955.

APPLE, PEACH SURVEYS

Recently released to members of the American Association of Nurserymen were the results of a survey of apple and peach varieties conducted by the American Pomological Society among commercial orchardists and extension horticulturists. The two major A. P. S. breakdowns are in apple and peach varieties now grown and those which are favored in new plantings.

This survey supplements two others conducted by the A. A. N. showing commercial production of apple and peach trees for 1955 and estimated production in 1956, as well as comparisons with past years. These surveys were mailed to members earlier this year. The next survey of varieties produced is planned for 1960.

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Research on Diseases of Ornamentals

By Dr. Carl H. Beckman

In the over-all picture of plant culture, the landscape man's and nurseryman's problems differ from those of the farmer or contract spray man because the former have so many different varieties of plants to deal with. Because of this great diversity of plant materials, in facing disease problems we must work out more general procedures than would be used by a potato farmer, for instance. For this reason, I should like to discuss several types of general disease problems from a research eye view.

For the sake of simplicity, let us start with nonparasitic, or environmental diseases; that is, those brought about by unfavorable conditions of moisture, temperature, soil and light.

These diseases have been and will be important, particularly to nurserymen and arborists, because we have imported plants that we like from many parts of the country and many parts of the world. In some cases they are not too well adapted to our particular conditions.

Many of these imported plants have never made the grade, and some of them were abandoned in the past because they just could not survive or did not make desirable plants under the conditions of growth here. We did not worry about those. Many others have adapted themselves well, and, likewise, we do not worry about those, unless it is producing enough of them. Actually, it is the borderline cases, the plants between the hopeless and the well adapted, that we might expect to give us trouble. These are the threshold plants—the ones that are standing at the doorstep, but do not quite know whether they will grow in or grow out.

In some cases plants may have done well, but some small shift in over-all temperature or rainfall or changes in cultivation practices may mean a difference between thrifty growth and poor growth. It seems likely that taxus needle drop is such a disease. Dr. Stuckey, of the Rhode Island station, is currently working on this problem.

One thing that we must be careful about in our field conditions is that we do not get too far away from natural conditions. Certainly, in our cultivation practices we should try to promote the growth of the plant as opposed to the growth of the weeds. But we have to be careful that we do not go too far.

Is there any basic principle to keep in mind in facing problems of an environmental nature? In attacking these problems we should learn all we can about the native growing conditions where soil, weather and plants have cooperated for a long time. By studying these conditions we can find out better just what may be wrong with the situation under which we are growing these plants.

Parasitic Diseases

Let us move on to the parasitic diseases, those caused by living organisms, insects or other plants.

First, let me say that the separation of parasitic from non-parasitic or non-environmental diseases is purely artificial and may be misleading, because any pathogenic disease is dependent upon a certain set of environmental conditions, and unless we have the proper condition for the bacteria or the fungi to grow, we do not get a serious disease problem.

For example, last summer we were going through some nurseries and we found some maples two to four inches in diameter that were completely dead and others that were seriously injured with nectria canker. Nectria is a weak organism in itself and usually has to have some injury through which to make an entrance. We did not notice any injury, except way down at the ground line. There we saw cracks in every case. Apparently, the strong winds of the hurricane of 1954 had cracked the main stems of these trees. Then the nectria canker invaded them. A year later the trees suddenly died.

To continue with the parasitic dis-

Talk on "Research on Diseases of Ornamentals" given at the annual meeting of the New England Nurserymen's Association by Dr. Carl H. Beckman, assistant research professor in plant pathology, Rhode Island agricultural experiment station, Kingston.

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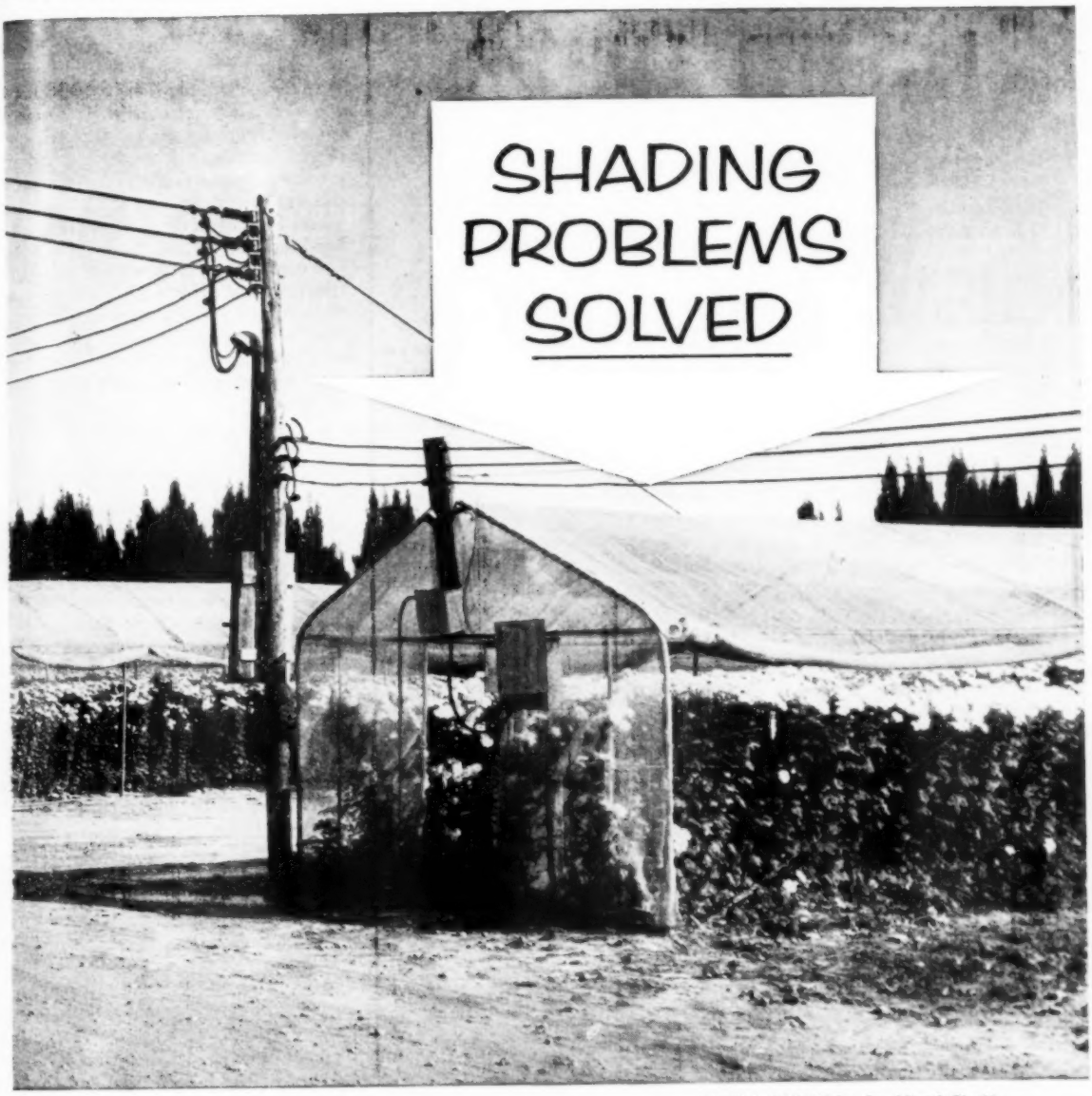

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Thuja occidentalis elegantissima, 1-yr., 2¼-in. rose pot, 4 to 6 ins.	20.00	180.00
Thuja occidentalis Globe, 1-yr., 2¼-in. rose pot, 4 to 6 ins.	20.00	.....
Thuja occidentalis pyramidalis, 1-yr., 2¼-in. rose pot, 4 to 6 ins.	18.00	170.00
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Ilex convexa bullata, 2-yr., 2¼-in. rose pot, 4 to 8 ins.	25.00	240.00
Ilex crenata hetzi, 1-yr., 2¼-in. rose pot, 4 to 6 ins.	18.00	170.00
Ilex crenata Hetzi, 2-yr., 2¼-in. rose pot, 6 to 12 ins.	22.00	200.00
Ilex crenata rotundifolia, 1-yr., 2¼-in. rose pot, 4 to 6 ins.	18.00	170.00
Ilex crenata rotundifolia, 2-yr., 2¼-in. rose pot, 4 to 8 ins.	22.00	200.00
Ilex crenata Stokes Pat. 887, 2-yr., 2¼-in. rose pot, 2 to 4 ins.	35.00	300.00
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eases as such, for simplicity's sake let us follow the plant from the seedling stage on up. Seed rot and damping-off are the first diseases we encounter. They are caused by a group of soil organisms that attack tissues of the germinating seeds and young seedlings, but seem unable to attack the plants after six to 10 weeks, when the tissue of the seedlings has hardened.

There are several means of control, some of which are now in use. First of all, we can use soil sterilization before planting, either by heat or chemical. We can also treat the seeds with chemicals, such as Arasan or Spergon.

Aeration Important

One thing that I should like to point out, from my experience during the past year, is the necessity for aeration. Often in the center of beds where the moisture and the humidity are high, damping-off occurs. If those young succulent tissues are kept just at the point where they do not wilt, they are going to harden faster. One place where we might do a better job is in controlling the moisture and aeration. I realize that this may be quite a problem.

There is also another possibility for controlling damping-off, a biological control. In normal forest soils we do not encounter damping-off of seedlings. As you know, in soil we have a complex integration of biological entities, all of which are competing for a living. Some of them have developed strong antagonism for damping-off organisms. One in particular, trichoderma, which grows on cellulose material, inhibits some of our seed and seedling rot organisms.

If we clear land from forest conditions and plant seeds in beds there, we do not run into a damping-off problem for some time. We may be able to employ this principle in the control of damping-off either by using forest soil or by sterilizing the seedbeds and then incorporating forest soil and leaf mulch with the medium. Some research along this line looks promising.

Moisture-Oxygen Balance

The basic problem with cuttings and grafts is to get the proper balance between moisture and oxygen. We need high moisture, because the normal absorption and conductive functions of the plant have been disrupted. On the other hand, we need good aeration, a good oxygen supply, to allow rapid growth of callus and roots.

These two needs are in opposition

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- **Second — Even though air and gases pass through the POLY-KRAFT film, *moisture is retained within the package.* The plants will not dry out.**

It is no longer necessary to overwrap the plant's roots with wet spaghnum moss, wood shavings or peat moss to supply moisture. It is better not to use any overwrappings, for wet packaged plants in warm conditions develop soft, unnatural white growths on stems and buds, which often wither after planting. Plant survival is increased with Thilco POLY-KRAFT Nursery Wrap, for it will not support mold growth. Shipping costs are greatly reduced too, for costly "dead weight" packaging materials are entirely eliminated.

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	10 to 11 cm.	9 to 10 cm.	8 to 9 cm.
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to each other, because the higher the moisture level the lower is the oxygen level. The trick is to keep these levels in proper balance for the particular plant material involved.

The longer it takes to get adequate root growth and callus formation, the more chance there is for rot to set in. Therefore, the selection of a good forest medium, sterilization and then sanitation to keep this medium as sterile as possible can reduce these rots. Again, some fungicides may be helpful.

I should point out that we are dealing here, in most cases, with stem tissues. These tissues grow better and are less susceptible to attack with a high oxygen supply. Therefore, we should probably keep moisture just high enough to prevent injurious desiccation.

Foliar Diseases

Now, let us turn to foliar diseases, which we encounter on the other plantings or on a client's grounds. This, again, is a complicated situation—complicated by the many varieties of plants and the many pathogens which attack them. We also have many chemical materials on the garden store shelves to use in various situations to try to control these diseases.

Now, what over-all principle should we keep in mind for foliar diseases? In general, sprays should be applied as the leaves develop. It is then that they are most susceptible to attack. To spray after spots begin to show is often ineffective, because infection has already occurred and the pathogen is protected on the inside of the plant where the fungicide cannot get at it. Later sprays may reduce secondary spread, but best control can be attained by stopping infections early. And, of course, sanitation is important in reducing both the primary inoculum and the secondary spread.

I should like to dwell a little on the systemic type of disease, particularly the Dutch elm disease. Present methods for control involve suppression. By spraying with DDT and taking down diseased and dead elms we try to prevent the propagation of the carrier beetle. We have had these control measures for some time, and in some areas they have been well established and are doing a good job. But there are two limitations; one, the lack of general participation, and two, local conditions in which many individual trees are not accessible. Such limitations make this type of control less effective.

There is another limitation. This procedure does not prevent loss of in-

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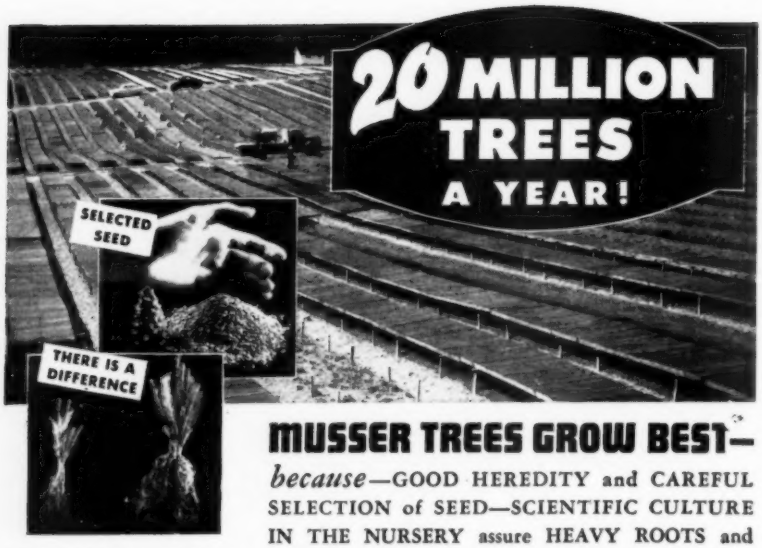

Bundle of 15 Musser seedlings, at right, compared with bundle of 15 ordinary seedlings.

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	4-yr., S., 6 to 10 ins.	10.00	50.00
	5-yr., T., 6 to 12 ins.	25.00	125.00
• **AUSTRIAN PINE**			
	3-yr., S., 8 to 14 ins.	8.00	40.00
• **BLACK HILLS SPRUCE**			
	3-yr., S., 4 to 8 ins.	7.00	35.00
	4-yr., S., 6 to 10 ins.	10.00	50.00
	4-yr., T., 5 to 10 ins.	17.00	85.00
• **NORWAY SPRUCE—Fast-growing** Special strain of our own collection.			
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	Excellent understock.		
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	2-yr., S., 8 to 14 ins.	10.00	50.00
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		Per 100	Per 1000
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	1-yr., T., 5 to 6 ins.	25.00	175.00
	2-yr., T., 8 to 12 ins.	40.00	.....
Taxus Moon's columnaris			
	1-yr., T., 4 to 6 ins.	25.00	175.00
Taxus browni			
	1-yr., T., 4 to 6 ins.	25.00	175.00
	2-yr., T., 6 to 10 ins.	40.00	350.00
Taxus hatfieldi			
	1-yr., T., 4 to 6 ins.	25.00	175.00
Taxus intermedia			
	1-yr., T., 4 to 6 ins.	25.00	175.00
	2-yr., T., 6 to 8 ins.	40.00	350.00
• **JUNIPER HETZI GLAUCA**			
	1-yr., T., 5 to 7 ins.	25.00	200.00
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• **RHODODENDRON** From hybrid seeds.			
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• **WHITE DOGWOOD**			
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dividual trees which may be highly valuable. For this reason, several stations are studying the mechanism of wilt with an eye toward chemotherapy.

I should like to tell you a couple of things that we are doing at the Rhode Island station.

First of all, we are working on therapy trials. We have had some success with compounds of a general group called the thiazolymercaptoacetates. You may have heard about these compounds recently.

We have had failures as well as successes with these compounds. The problem is to know just when we should treat the trees and what dosage we should use. These are important parts of any treatment. If you have the best chemical in the world and do not use it right, you are not going to get proper results. These are things that we are working on now. We are trying to determine just how effective a treatment can be obtained with these chemicals. It may be that these chemicals will not be effective in all cases.

Wilt Mechanism Study

We are studying possible wilt mechanisms, particularly those involving enzymes and hormones produced by wilt fungi. Why should we be studying these? In many wilt diseases an upset in the water economy of the plant has been found, particularly a plugging of the sap stream. There is little obvious degradation or injury to tissues in general. Usually there is only a sparse growth of the fungus in the tree. These facts indicate that some highly active metabolite or by-product is produced by the pathogen which upsets the normal metabolism of the host plant and triggers the wilting action. Enzymes and hormones are such compounds. If we can find out what is doing the damage, we, of course, stand a much better chance of counteracting it.

I should like to point out that these studies are a long-term proposition. In defense of this statement, I should like to point out the work that has been done on polio and the Salk vaccine. There have been many years spent studying this disease. When you come right down to it, plant diseases are, in many respects, as complex as a human disease. When we try to delve into the workings of normal and abnormal life—things get pretty involved. Therefore it takes time to build up the basic knowledge needed to solve some of our problems.

In conclusion, I should like to point out that in attacking a disease

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WM. PITT, cochineal-red	45.00	40.00
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INGLESCOMBE YELLOW, yellow	45.00	40.00
MARSHAL HAIG, brilliant scarlet	50.00	42.00
MRS. J. T. SCHEEPERS, yellow	50.00	42.00
NORTHERN QUEEN, white and pink	50.00	45.00
OSSI OSWALDA, white and rose	45.00	40.00
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10 to 11-in., 100 per case	21.00	20.00

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All Above Varieties:	Per 100	Per Case
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7 to 8-in., 250 per case	11.00	25.00
8 to 9-in., 200 per case	13.50	25.00
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10 to 11-in., 100 per case	26.00	25.00

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LILIUM SUTCHUENENSE
LILIUM MAXWILL
LILIUM TIGRINUM SPLENDENS
7 to 8-in.: $15.00 per 100; $135.00 per 1000.

BREEDER TULIPS

	12-cm. and up	11 to 12-cm.
DILLENBURG, apricot-orange	$45.00	$40.00
GEORGE GRAPPE, lavender-mauve	50.00	42.00
LOUIS XIV, purple, bronze tinge	55.00	50.00
ORANGE DELIGHT, clear bronze	55.00	50.00
TANTALUS, yellow and purple	55.00	50.00
VELVET KING, red-purple	50.00	45.00
RAINBOW BREEDER MIXTURE	50.00	40.00

SINGLE EARLY TULIPS

	12-cm. and up	11 to 12-cm.
COULEUR CARDINAL, deep red	$65.00	$55.00
GENERAL DE WET, bright orange	50.00	45.00
IBIS, deep pink, white markings	50.00	45.00
KEIZERSKROON, red, yellow edge	50.00	45.00
OLYMPIADE, extra-fine yellow	50.00	45.00
PRINCE CARNAVAL, red and yellow	50.00	45.00
PRINCE OF AUSTRIA, orange-red	50.00	45.00
WHITE HAWK, pure white	55.00	50.00
RAINBOW MIXTURE	50.00	45.00

DOUBLE EARLY TULIPS

BONANZA, red, edged yellow	50.00	40.00
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MARECHAL NIEL, yellow	50.00	40.00
MR. VAN DER HOEF, pure yellow	55.00	45.00
MURILLO MAX., white, flushed pink	55.00	45.00
ORANGE NASSAU, orange-scarlet	55.00	45.00
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RAINBOW MIXTURE	55.00	45.00

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SYMPHONIA, carmine-rose	45.00	40.00
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RAINBOW MIXTURE	50.00	42.00

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FOSTERIANA TYPE:	12-cm. and up	11 to 12-cm.
PRINCEPS, orange-red	$55.00	$45.00
RED EMPEROR, scarlet	50.00	45.00

PRAESTANS TYPE:	Top Size
PRAESTANS, carmine, multiflowered	$ 80.00
FUSILIER, improved type, dwarf habit	150.00

HYACINTHS

		Per 1000
BISMARCK, sky-blue, early		
CITY OF HAARLEM, yellow		
DELFT BLUE, porcelain-blue		
DR. STRESEMANN, large, bright, clear blue. Fine for pots.	19-cm. and up	$135.00
GRAND MAITRE, lavender-blue	18 to 19-cm.	120.00
JAN BOS, bright red, early		
KING OF THE BLUES, dark blue	17 to 18-cm.	100.00
LADY DRBY, light pink		
LA VICTOIRE, bright carmine	16 to 17-cm.	85.00
L'INNOCENCE, pure white		
MARCONI, deep rosy-pink	15 to 16-cm.	70.00
OSTARA, deep blue, early		
PINK PEARL, bright rose	14 to 15-cm.	60.00
QUEEN OF THE PINKS, pink		

NARCISSI

	D.N. No. 1	D.N. No. 2	D.N. No. 3
BEERSHEBA (Trumpet), finest, purest white. Good forcer.	$150.00	$125.00	$95.00
CARLTON (Incomparabilis), yellow, frilled cup	85.00	65.00	45.00
CHEERFULNESS (Poetaz), double white, late forcer	75.00	60.00	45.00
FORTUNE (Incomparabilis), deep yellow, orange cup	85.00	65.00	45.00
GERANIUM (Poetaz), white perianth, orange-red cup	75.00	60.00	45.00
GOLDEN HARVEST (Trumpet), golden-yellow, large	100.00	85.00	75.00
IMPERATOR (Trumpet), white perianth, cream trumpet	95.00	80.00	65.00
INGLESCOMBE (Double), soft canary-yellow	85.00	65.00	45.00
KING ALFRED (Trumpet), golden-yellow	90.00	70.00	45.00
LAURENS KOSTER (Poetaz), white perianth, orange cup	65.00	50.00	35.00
MAGNIFICENCE (Trumpet), deep golden-yellow	85.00	65.00	45.00
MOUNT HOOD (Trumpet), pure white, very large	150.00	130.00	100.00
MRS. R. O. BACKHOUSE (Trumpet), white, pink trumpet	....	....	140.00
REMBRANDT (Trumpet), golden-yellow, large flower	100.00	70.00	45.00
SCARLET ELEGANCE (Incomparabilis), yellow petals, orange cup	85.00	65.00	45.00
SPRING GLORY (Trumpet), white, yellow trumpet	85.00	70.00	45.00
TEXAS (Double), yellow and fiery-orange	85.00	70.00	50.00
TWINK (Double), primrose perianth, orange center	85.00	70.00	50.00
MIXTURE OF TRUMPET VARIETIES ONLY	85.00	65.00	45.00
MIXTURE OF ALL TYPES	75.00	60.00	45.00

CROCUS

Prices per 1000	7 to 8-cm.	8 to 9-cm.	9 to 10-cm.	10 to 11-cm.
BLUE or PURPLE	$12.00	$14.00	$16.00	$20.00
STRIPED	12.00	14.00	16.00	20.00
WHITE	14.00	18.00	22.00	25.00
YELLOW	14.00	18.00	22.00	25.00
MIXED COLORS	13.00	16.00	19.00	22.00

DUTCH IRIS

WEDGWOOD, well-graded, healthy stock	Per 100	Per 1000
8 to 9-cm.	$2.00	$15.00
8½ to 9-cm.	2.50	17.50
9 to 10-cm.	3.50	30.00
10 to 11-cm.	5.50	47.50

	8-cm. and up	7 to 8-cm.	6 to 7-cm.
GOLDEN EMPEROR, deep yellow	$30.00	$20.00	$12.00
GOLDEN HARVEST, fine golden-yellow	30.00	20.00	12.00
H. G. VAN VLIET, early dark blue	30.00	20.00	12.00
IMPERATOR, late dark blue	30.00	20.00	12.00
WHITE ECELSIOR, pure white, late	22.00	15.00	10.00
WHITE SUPERIOR, pure white, large flower	25.00	20.00	15.00
YELLOW QUEEN, pure yellow, late	....	35.00	25.00
DUTCH IRIS—RAINBOW MIXTURE, all colors	25.00	15.00	10.00

CAJANUS (Spanish Iris), dark yellow, late.
Top Size, $20.00 per 1000
IRIS RETICULATA, violet-blue, sweet-scented.
Top Size, $20.00 per 1000

MISCELLANEOUS BULBS

	Top Size Per 100	Top Size Per 1000
CHIONODOXA Luciliae (Glory-of-the-Snow), lilac-blue	$ 2.00	$15.00
ERANTHIS Hyemalis (Winter Aconite), golden-yellow	3.00	25.00
FRITILLARIA Imperialis (Crown Imperial), mixed	65.00	....
FRITILLARIA Meleagris (Guinea-Hen Flower), mixed colors	2.50	20.00
GALANTHUS (Snowdrops), single type	3.00	25.00
GALANTHUS NIVALIS PLENUS (Snowdrops) double	4.50	40.00
MUSCARI Armeniacum or **Heavenly Blue** (Grape Hyacinth)	2.00	15.00
MUSCARI Botryoides Alba (Grape Hyacinth), pure white	2.50	20.00
SCILLA Campanulata, white, blue, pink or mixed	3.00	25.00
SCILLA Sibirica (Siberian Squill), sky-blue	3.00	25.00
SCILLA Spring Beauty, larger and taller than Sibirica	5.50	50.00

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problem, from a research standpoint or from a practical standpoint, the main thing is to keep the natural situation in mind as much as possible. If we use this as a yardstick, I think that we can make good progress.

ARBORETUM ADDITION

Morton Arboretum, Lisle, Ill., one of six arboretums in the country currently maintaining educational programs directed to the public, held a formal opening of its new Arboretum Center the afternoon of September 27.

The added facilities, which have been integrated with the older Administration building, include the Jean Morton Cudahy memorial rotunda and lecture room, a research wing and three special propagating houses. Over 100 persons can be accommodated in the lecture room, which has desk-arm seats and projection equipment. The rotunda offers a handsome view down the hedge gardens through the floor-to-ceiling glass wall forming half the enclosure.

Three aluminum greenhouses with individual heating controls have an adjoining workroom. There are also three cooling rooms where temperatures can be dropped to 20 and 30 degrees below zero, for hardiness tests. Effects of freezing and thawing and of sleet on plants will be studied as part of a research program that will also take in studies of ornamental woody plants, study of the Dutch elm disease and nutrient studies on elms. Other work will be carried on in plant breeding and developing maintenance equipment. Display areas will be planned so that visitors can observe the work being conducted. A class study room and photographic workroom occupy basement area in the new quarters.

Speakers at the opening ceremonies included Suzette Morton Zurcher, who read an address by her father, Sterling Morton, on "The Morton Interest in Trees." Mr. Morton was prevented from giving the talk personally because of illness. Clarence Godshalk, director, told some of the plans being developed programwise. Dr. George S. Avery, Jr., director of the Brooklyn Botanic Garden, Brooklyn, N. Y., outlined what he believed to be the challenges facing the Morton Arboretum—in missionary work within cities; in integrating horticultural educational activities; in liaison work with the nursery trade, universities and civic groups, and in forming public opinion on city development and trained horticultural advice.

FIELD-GROWN LINING-OUT STOCK

All stock grown in open field beds.

	Each Per 100	Each Per 1000
Azalea mollis (Chinese Azalea)		
6 to 8 ins., 2-yr., T.	$0.22	$0.18
8 to 10 ins., 2-yr., T.	.35	.30
10 to 12 ins., 3-yr., T.	.65	.60
Azalea, Ghent (pontica), pastel shades		
2 to 5 ins., 2-yr., T.	.20	..
5 to 8 ins., 3-yr., T.	.25	.20
8 to 10 ins., 3-yr., T.	.45	..
Azalea kaempferi		
2-yr., T., field bed	.28	.25
6 to 8 ins., 3-yr., T.	.38	..
Azalea mucronulatum, lavender		
1-yr., bed, T.	.25	.22
4 to 8 ins., 2-yr., T.	.35	.32
8 to 10 ins., 2-yr.	.45	..
10 to 15 ins., 3-yr.	.65	..
Azalea schlippenbachi, bright, pink blossoms		
2-yr., field bed, T.	.28	.25
3-yr., field bed, T.	.35	.32
Buxus sempervirens welleri (Weller's Hardy Boxwood)		
1-yr., field bed, T.	.22	.20
4 to 6 ins., 2-yr., T.	.28	.25
6 to 8 ins., 2-yr., T.	.35	.32
8 to 10 ins., 3-yr., T.	.45	..
Chamaecyparis filifera aurea		
6 to 10 ins., 2-yr., T.	.35	..
Chamaecyparis lawsoniana allumi		
6 to 8 ins., 1-yr., T.	.25	.22
8 to 10 ins., 2-yr., T.	.30	.28
10 to 15 ins., 2-yr., T.	.45	..
Chamaecyparis plumosa aurea		
4 to 6 ins., 1-yr., T.	.25	.22
6 to 8 ins., 2-yr., T.	.35	.30
8 to 10 ins., 3-yr., T.	.40	.35
10 to 15 ins., 3-yr., T.	.50	.45
Euonymus fortunei carrierei		
12 to 15 ins., 3-yr., T.	.35	.30
Euonymus fortunei coloratus Procumbent, broad-leaved creeper.		
6 to 10 ins., 2-yr., T.	.25	.20
12 to 15 ins., 2-yr., T.	.35	.30
Euonymus fortunei erectus (Big-leaved Winter Creeper)		
10 to 12 ins., 2-yr., T.	.25	.22
12 to 15 ins., 2-yr., T.	.35	.30
15 to 18 ins., 3-yr., T.	.45	..
Euonymus radicans coloratus Small-leaved, procumbent creeper. Fast cover.		
10 to 15 ins., 2-yr., T.	.25	.20
12 to 15 ins., 3-yr., T.	.35	.30
Euonymus radicans vegetus		
6 to 8 ins., 1-yr., T.	.18	.16
8 to 12 ins., 2-yr., T.	.30	..
10 to 15 ins., 3-yr., T.	.45	..
Ilex crenata (Japanese Holly), pyramidal		
4 to 6 ins., 1-yr., T.	.20	.18
6 to 8 ins., 1-yr., T.	.25	.20
8 to 10 ins., 2-yr., T.	.35	..
10 to 12 ins., 3-yr., T.	.45	..
Ilex crenata convexa (bullata)		
6 to 8 ins., 1-yr., T.	.25	.22
8 to 10 ins., 2-yr., T.	.38	.35
10 to 12 ins., 2-yr., T.	.48	.45
12 to 15 ins., 3-yr., T.	.65	.55
Ilex crenata hetzi An improved convexa.		
6 to 8 ins., 2-yr., T.	.30	.28
8 to 10 ins., 2-yr., T.	.40	.38
10 to 15 ins., 3-yr., T.	.55	.50
Ilex crenata helleri (Heller's Dwarf Holly)		
3 to 6 ins., 2-yr., T.	.35	.32
6 to 8 ins., 3-yr., T.	.45	.40
8 to 10 ins., 3-yr., T.	.65	.60
Ilex rotundifolia (Round-leaved Japanese Holly)		
3 to 6 ins., 1-yr., T.	.20	.18
6 to 8 ins., 1-yr., T.	.25	.22
8 to 10 ins., 2-yr., T.	.38	.35
10 to 15 ins., 2-yr., T.	.48	.45
12 to 15 ins., 3-yr., T., cutback	.70	.60

SEEDLINGS

	Per 100	Per 1000	Per 1000 at 10,000 rate
Blue Spruce (Picea pungens)			
6 to 8 ins., 2-yr., S.	$10.00	$40.00	....
4 to 6 ins., 2-yr., S.	8.00	30.00	$25.00
2 to 4 ins., 2-yr., S.	6.00	25.00	20.00
Norway Spruce			
6 to 10 ins., 2-yr., S.	8.00	28.00	25.00
4 to 6 ins., 2-yr., S.	6.00	22.00	20.00
2 to 4 ins., 2-yr., S.	5.00	18.00	15.00
(Once transplanted—see elsewhere on this list.)			
Scotch Pine			
8 to 12 ins., 2-yr., S.	8.00	30.00	28.00
4 to 8 ins., 2-yr., S.	6.00	25.00	20.00
2 to 4 ins., 2-yr., S.	5.00	20.00	18.00
2 to 6 ins., 3-yr., T.	10.00	40.00	30.00
Austrian Pine			
4 to 8 ins., 2-yr., S.	8.00	25.00	20.00
2 to 4 ins., 2-yr., S.	6.00	20.00	18.00

(Once transplanted—see elsewhere on this list.)

100 at 100 rate; 1000 at 1000 rate; 5000 and up at 10,000 rate.

	Each Per 100	Each Per 1000
Juniper, Andorra (Purple Andorra Juniper)		
6 to 8 ins., 1-yr., T.	$0.30	..
10 to 12 ins., 3-yr., T.	.45	$0.40
12 to 15 ins., 3-yr., T.	.50	.45
Juniperus canadensis aurea (Golden Canadian Juniper)		
4 to 6 ins., 1-yr., T.	.25	..
6 to 8 ins., 2-yr., T.	.35	..
8 to 10 ins., 3-yr., T.	.45	..
Juniperus glauca hetzi (Hetz Juniper)		
8 to 10 ins., 2-yr., T.	.35	.30
10 to 12 ins., 3-yr., T.	.45	.38
12 to 15 ins., 3-yr., T.	.55	.45
15 to 18 ins., 3-yr., T.	.70	..
Juniperus communis hibernica (Irish Juniper)		
15 to 18 ins., 4-yr., T., cutback	.55	.50
Juniperus communis hibernica fastigiata (Compact Irish Juniper)		
8 to 10 ins., 2-yr., T.	.35	.30
10 to 12 ins., 2-yr., T.	.38	.33
12 to 15 ins., 3-yr., T.	.45	.40
15 to 18 ins., 3-yr., T.	.55	.50
Juniperus horizontalis glauca		
6 to 8 ins., 2-yr., T.	.35	.32
8 to 10 ins., 2-yr., T.	.40	..
10 to 15 ins., 3-yr., T.	.55	..
Juniperus pfitzeriana compacta (Nelson's variety). Gray-blue Pfitzer. Shears compactly and develops quickly, with good, fibrous roots.		
6 to 8 ins., 1-yr., T.	.35	.30
8 to 10 ins., 2-yr., T.	.45	..
10 to 15 ins., 3-yr., T.	.65	..
Juniperus pfitzeriana, regular		
8 to 10 ins., 2-yr., T.	.45	..
10 to 15 ins., 2-yr., T.	.55	..
15 to 18 ins., 3-yr., T.	.65	..
Juniperus pfitzeriana aurea		
8 to 10 ins., 2-yr., T.	.45	..
10 to 15 ins., 3-yr., T.	.65	..

	Each Per 100	Each Per 1000
Juniperus squamata meyeri (Meyer's Juniper)		
4 to 8 ins., 2-yr., T.	$0.35	..
8 to 12 ins., 3-yr., T.	.50	..
Juniperus stricta		
4 to 8 ins., 1-yr., T.	.35	$0.32
8 to 12 ins., 3-yr., T.	.45	.42
Leucothoe catesbaei (Drooping Leucothoe)		
6 to 8 ins., 2-yr., T.	.25	.20
8 to 10 ins., 3-yr., T.	.35	.30
10 to 12 ins., 3-yr., T.	.45	..
12 to 15 ins., 3-yr., T.	.55	..
Liquidambar styraciflua (Sweet Gum)		
8 to 12 ins., 2-yr., T.	.15	.12
12 to 18 ins., 2-yr., T.	.20	.18
18 to 24 ins., 3-yr., T.	.25	.20
Picea excelsa (Norway Spruce)		
4 to 6 ins., 3-yr., T.	.12	.10
6 to 8 ins., 3-yr., T.	.15	.12
8 to 10 ins., 4-yr., T.	.20	.18
10 to 15 ins., 4-yr., T.	.25	.20
Picea pungens (Colorado Blue Spruce)		
3 to 6 ins., 3-yr., T.	.20	..
6 to 8 ins., 4-yr., T.	.28	..
Pieris floribunda (Mountain Andromeda)		
3 to 6 ins., 2-yr., T.	.25	.20
6 to 8 ins., 2-yr., T.	.30	..
8 to 12 ins., 3-yr., T.	.45	..
Pieris japonica (Japanese Andromeda)		
6 to 8 ins., 2-yr., T.	.28	.25
8 to 10 ins., 2-yr., T.	.35	..
10 to 15 ins., 4-yr., T.	.65	..
Pinus mugo (Dwarf Mugho Pine)		
2 to 5 ins., 2-yr., S.	.12	.10
4 to 8 ins., 3-yr., T.	.25	..
Pyracantha coccinea lalandi		
6 to 8 ins., 1-yr., T.	.25	..
8 to 12 ins., 2-yr., T.	.32	.30
Rhododendron Hybrids, various colors, from red plants. Seedling grown. Very hardy.		
2-yr., field bed, T.	.35	.32
3 to 5 ins., 3-yr., T.	.45	..
5 to 8 ins., 4-yr., T.	.55	..
8 to 10 ins., 4-yr., T.	.85	..
10 to 12 ins., 4-yr., T.	1.00	..
Sophora japonica		
1-yr., S.	.12	.08
4 to 8 ins., 2-yr., T.	.20	.18
Taxus cuspidata (Spreading Yew)		
6 to 8 ins., 2-yr., T.	.38	.35
8 to 10 ins., 2-yr., T.	.45	..
10 to 15 ins., 3-yr., T., cut.	.75	..
Taxus media browni (Brown's Yew)		
6 to 8 ins., 2-yr., T.	.35	..
8 to 10 ins., 2-yr., T.	.45	..
Taxus media hicksi (Hicks' Yew)		
6 to 8 ins., 2-yr., T.	.35	..
8 to 12 ins., 2-yr., T.	.45	..
Thuja occidentalis douglasi aurea (Golden Arborvitae)		
6 to 8 ins., 2-yr., T.	.35	.32
8 to 10 ins., 3-yr., T.	.45	..
Thuja occidentalis elegantissima lutea, golden tip over dark green foliage.		
6 to 8 ins., 2-yr., T.	.35	.30
8 to 10 ins., 3-yr., T.	.40	.35
10 to 12 ins., 3-yr., T.	.45	.40
12 to 15 ins., 4-yr., T.	.55	.50
Thuja occidentalis globosa (Woodward Globe Arborvitae)		
6 to 8 ins., 1-yr., T.	.25	..
8 to 12 ins., 2-yr., T.	.40	.35
Thuja occidentalis pyramidalis		
10 to 12 ins., 2-yr., T.	.45	..
12 to 15 ins., 3-yr., T.	.55	..
Tsuga canadensis (Hemlock)		
4 to 6 ins., 3-yr., T.	.25	.22
6 to 8 ins., 3-yr., T.	.25	.22
8 to 12 ins., 4-yr., T.	.30	.28
Viburnum opulus (Snowball), red berries, fall.		
3-yr., T., cutback	.18	.12
10 to 18 ins., 3-yr., T., cutback	.18	.12
18 to 24 ins.	.25	.20
Viburnum opulus nana (Dwarf Bush Cranberry)		
2-yr., field, T.	.25	.22
6 to 8 ins., 3-yr., T.	.35	.32
8 to 10 ins., 4-yr., T.	.45	.42
10 to 12 ins., 4-yr., T.	.55	.50

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THIS BUSINESS OF OURS

Reflections on the Problems of Nurserymen

By E. Sam Hemming

INTERESTING NATIVES

The collecting of native plants by nurserymen is usually a nuisance unless a firm is especially set up for that type of activity. Some firms can do it quite efficiently. In addition to those plants normally collected there are others that, due to their nature and the manner in which they grow, do not lend themselves readily to this type of trade. Yet these plants, when growing in a natural setting, often have an unique charm and value of their own. Usually these plants are of interest solely to the landscape nurseryman or architect.

Several years ago a favorite customer asked me if I would get her specimens of Aralia spinosa to plant in a clump near her winding driveway. I told her I would try to transplant some from the wild. This plant, commonly known as devil's-walking-stick, grows as a stiff, straight stalk up to six or eight feet high with a stem covered with spines. The foliage crowns the top, as with the palm, and in the fall has a cluster of berries at the top. The plant, which would be a nuisance to grow in the nursery, was moved by digging up the roots, cutting the tops to the ground and letting the plant make new tops. Today the planting is singularly attractive, creating an effect of vertical stems that no other plants can give.

The sumacs are another group of plants usually not grown in nurseries because they make poor individual specimens and have trailing roots that send up stems every so often. These plants have a landscape feature that is hard to equal, for their fall color of red and scarlet is as brilliant as that of almost any other plant. Either planted in a natural setting or growing in one they can give a vivid mass of color. They also have a cockscomb-like mass of flower and fruit that is attractive to some. The best sumacs are Rhus typhina, copallina and glabra; some members of the family are poisonous and should be avoided, of course.

Bayberry

We have on occasion grown the common bayberry in the nursery but it has such poor roots that it is almost best handled as a collected plant and cut back. Its evergreen, fragrant leaves and interesting gray berries make it a useful native plant. It, or perhaps I should say they, as there are two species, have the added advantage of surviving on very poor sandy soil and are useful for landscaping at the seashore.

As individuals the wild plums or haws have white flowers, not very showy, and small purple fruit and in addition are quite thorny, but every once in a while I run across a wild thicket maybe 30 feet wide which, when in full bloom, has mass sufficient to make quite a show. Of course such a thicket would only be useful and attractive on a large native planting.

Nearly as attractive as the sight of dogwood in the spring is the early display in our woods of the shadbush, or amelanchier. Nurserymen have attempted at times to grow this plant, but individually it is singularly disappointing. It grows sprawly and irregular, and its leaf is so commonplace it is almost difficult to identify. I have tried planting groups of shadbush, but the results have been only indifferently successful.

Another native plant that has a rather singular place in horticulture is the common elderberry. This plant has a berry that is easy to harvest and is readily made into a tasty jelly or wine. Yet little, or perhaps I should say nothing, has been done to domesticate it or improve it. I have seen individual plants of it growing wild that when laden with fruit were as showy as many ornamentals. It transplants readily enough, and a

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Successor to Moon's
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BUY NORTHERN-GROWN HARDY AZALEAS

Order your hardy azaleas now for fall or spring delivery from the finest collection we have ever offered to the trade. Try ours once and see the difference.

GABLE AZALEAS

Louise Gable, double, pink
6 ins., **75c;** 8 ins., **$1.00;** 10 ins., **$1.25;** 12 ins., **$1.50.**

Rosebud, double, pink
6 ins., **75c;** 8 ins., **$1.00;** 10 ins., **$1.25;** 12 ins., **$1.50;** 15 ins., **$2.50;** 18 ins., **$3.50.**

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6 ins., **75c;** 8 ins., **$1.00;** 10 ins., **$1.25;** 12 ins., **$1.50;** 15 ins., **$2.50.**

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Carmen, large, rose-colored
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00.**

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6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00;** 18 ins., **$2.50;** 20 ins., **$3.50;** 24 ins., **$5.00;** 30 ins., **$6.00.**

Louise, red
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00.**

Othello, brick-red
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00;** 18 ins., **$2.50;** 20 ins., **$3.50;** 24 ins., **$5.00;** 30 ins., **$6.00.**

Salmon Beauty, salmon-pink
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00;** 18 ins., **$2.50;** 20 ins., **$3.50;** 24 ins., **$5.00;** 30 ins., **$6.00;** 36 ins., **$7.50.**

KURUME AZALEAS

Addy Wery, deep vermilion-red
6 ins., **75c;** 8 ins., **$1.00;** 10 ins., **$1.25;** 12 ins., **$1.50;** 15 ins., **$2.50.**

Amoena, purple-red
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00.**

Apple Blossom, pink
15 ins., **$2.50;** 18 ins., **$3.50.**

KURUME AZALEAS—*Continued*

Coral Bells, pink
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00.**

Daybreak, pink
15 ins., **$2.50;** 18 ins., **$3.50.**

Favorite, deep rosy-pink
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25.**

Hinodegiri
Our Hinodegiri is a very dark red.
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00;** 18 ins., **$2.50;** 20 ins., **$3.50;** 24 ins., **$5.00;** 30 ins., **$6.00;** 36 ins., **$7.50.**

Hino-Crimson
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25.**

Maxwell, red
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25.**

Orange Beauty, orange
10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00.**

Polaris, double, white
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00.**

Snow, white
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25.**

VUYKIANA AZALEAS

Beethoven, mauve-lilac, waved petals
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00.**

Johann Strauss, single, rose blotched
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00.**

Hexe, double, red, late
12 ins., **$2.00;** 15 ins., **$2.50;** 18 ins., **$3.50.**

Ledifolia alba, white
6 ins., **50c;** 8 ins., **75c;** 10 ins., **$1.00;** 12 ins., **$1.25;** 15 ins., **$2.00;** 18 ins., **$2.50;** 20 ins., **$3.50;** 24 ins., **$5.00.**

Macrantha, salmon, late
12 ins., **$1.50;** 15 ins., **$2.50.**

Mollis, pink, yellow, orange
12 ins., **$1.75;** 15 ins., **$2.00;** 30 ins., **$7.50.**

BAIER LUSTGARTEN NURSERIES

Jericho Turnpike
MIDDLE ISLAND, L. I., N. Y.
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AZALEAS

Reliably hardy American and Asiatic varieties.

3-yr., XX, for growing on.

Mollis
Vaseyi
Calendulacea
Arborescens

Finished budded stock, B&B.

Schlippenbachi
10 to 12 to 15 ins.
Vaseyi
10 to 12 ins.
Mollis
12 to 15 to 18 ins.

TAXUS LINERS, better varieties.

List on request. Inspection invited.

BROOKFIELD GARDENS
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EVERGREENS

300 acres of choice Evergreens ready for immediate resale

Write for list.

GARDNER'S NURSERIES, Inc.
ROCKY HILL, CONN.

LAST CALL

	Per 100	Per 1000
BOSTON IVY		
2-yr., T., No. 1	$30.00	$250.00
2-yr., T., No. 2	17.50	150.00
2-yr., T., No. 3 (shorts)	10.00	75.00
CORNUS FLORIDA (White Dogwood)		
Below grafting size	5.00	30.00
Grafting and budding size	7.50	60.00
Above grafting size	12.50	100.00
2-yr., T., 18 to 24 ins.	25.00	200.00
2-yr., T., 18 to 36 ins.	50.00	400.00
CYDONIA JAPONICA, seedlings		
1-yr., 10 to 15 ins.	5.00	40.00
1-yr., 15 to 21 ins.	7.50	60.00
CALIFORNIA PRIVET		
1-yr., cuttings, 10 to 24 ins.	6.00	50.00
CORNUS FLORIDA RUBRA		
1-yr., grafts, field-grown	75.00	700.00

Free packing for cash with order.

BROUWER'S NURSERIES
BOX 25 NEW LONDON, CONN.

few nurseries have grown it, yet it arouses little interest.

There are a number of plants like the foregoing that can be classed among the economically unimportant, yet each of them has certain intrinsic values that can be utilized on rare occasions.

AD AIDS OFFERED

The average nurseryman outside the mail-order field who has sought to publicize his products through the agency of printers' ink has, to date, had at his command all too few of the aids which professional advertising has offered most lines of business.

Top-level advertising, of course, takes money. A few firms in the trade with specialties that could be sold at profitable margins have been able to utilize extensive and well prepared advertising. But the nurseryman with limited advertising funds, using chiefly community or small newspapers, has generally found himself restricted to simple display techniques —too frequently price listings—because the publisher had no suitable artwork to provide, and special work seemed too costly to consider.

It has been the experience of many a manufacturer or wholesale distributor that he had a vital concern in the advertising efforts of his dealer representative. He has supplied a variety of free or low-cost materials, in consequence, to facilitate any promotional work the dealer might undertake. These supplies have included window banners, a host of store displays, mailing pieces and mat services for enhancing newspaper advertising. At such a point of production, the volume made for the lowest cost of the materials.

Producer assistance for the retail nurseryman's advertising efforts has been urged from time to time in this publication. Among the suggestions has been the furnishing of good-quality, eye-catching, decorative, informative illustrative material to give greater appeal to nursery stock ads. Now and again something of this nature has been made available. A really substantial step in this direction is being currently announced. This is a newspaper mat service offered to its customers by Mount Arbor Nurseries, Shenandoah, Ia.

The group of newspaper mats offered by this wholesale supplier of nursery stock combines a variety of illustration work that can be incorporated in ads of many sizes and with a variety of purposes. Proof sheets of the mats show 71 subjects (grouped several to a sheet), all described as new. Further, they are dis-

"A friendly, efficient sales service"

E. D. ROBINSON
SALES AGENCY
38 S. Elm St. P. O. Box 247
WALLINGFORD, CONN.

Representing
Adams Nursery, Inc.
Bristol Nurseries, Inc.
Barnes Bros. Nursery Co., Inc.
The Cheshire Nursery, Inc.
Gulf Stream Nursery, Inc.
Maxwell, Bowden & Rice, Inc.
A. N. Pierson, Inc.
Sunny Border, Inc.
Verkade's Nurseries

ORNAMENTAL EVERGREENS

Trees and Shrubs

BAGATELLE NURSERY
P. O. Huntington Station, N. Y.

HEMLOCK

Rhododendron—Kalmia

Azalea

CURTIS NURSERIES
CALLICOON, N. Y.

LINING-OUT STOCK

Our fall price list of quality liners will be ready about October 15. If interested, please write for same.

THE MURGLAS CORPORATION
Formerly
Thomas B. Meehan Co., Inc.
DRESHER, PA.

SHEPARD NURSERIES

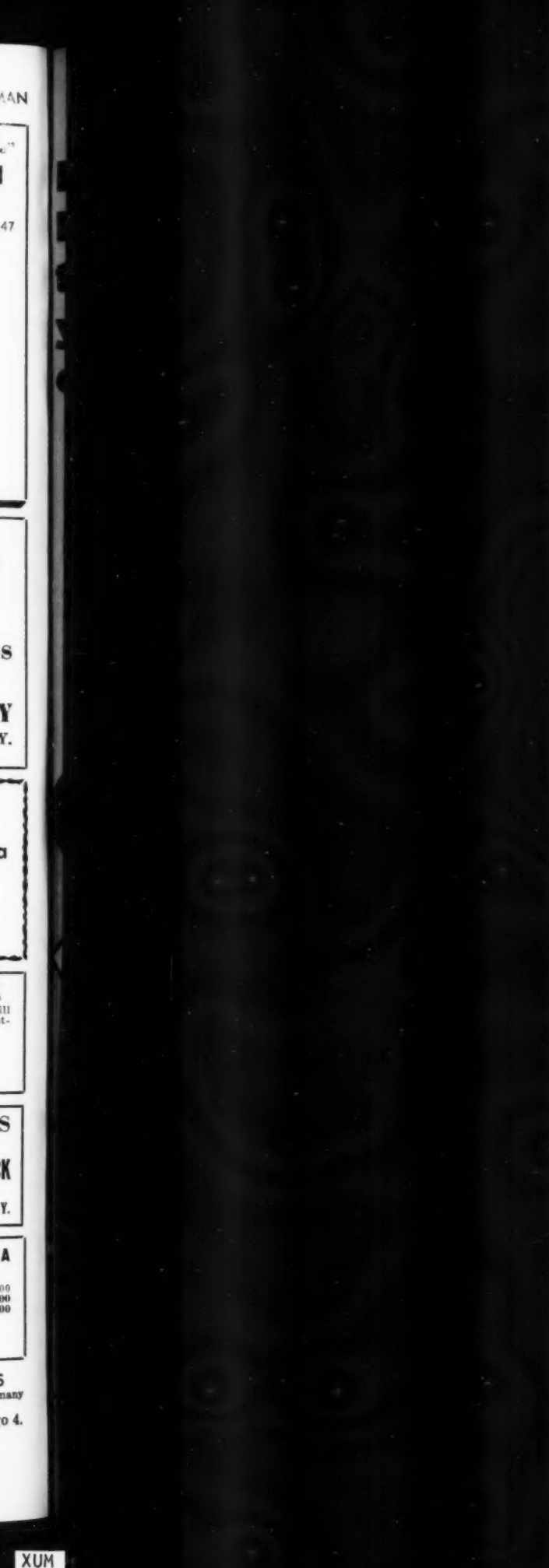
Growers and Distributors of
ORNAMENTAL NURSERY STOCK
Truckloads only, no boxing.
60 acres growing. Skaneateles, N. Y.

SPIRAEA JAPONICA COCCINEA
(Improved Anthony Waterer)

	Per 100	Per 1000
12 to 15 ins.	$30.00	$250.00
15 to 18 ins.	40.00	350.00

KINGWOOD NURSERIES
MENTOR, O.

65 PRACTICAL GARDEN PLANS
by John Elliott. Wide range of plans for many conditions. **$1.00.**
American Nurseryman Chicago 4.



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XUM

M-A is the Nursery Wrap that can cut your shipping costs 50%!

...is lightweight, low-cost, eliminates need for heavy moistened packing material!

You make spectacular savings on shipments of rose bushes, delphinium, strawberries, perennials, evergreens and other types of nursery stock with M-A Poly-Pak Nursery Wrap.

M-A Poly-Pak Nursery Wrap retains the original moisture. You don't have to use heavy, moistened packing materials. This cuts weight drastically, and shipping costs as much as 50%.

You also reduce customer complaints with M-A Poly-Pak Nursery Wrap. Your stock arrives in good condition because M-A Poly-Pak gives you protection-plus.

Increase your profit margin by cutting shipping costs. Put M-A Poly-Pak Nursery Wrap to work for you right away.

IN ALL NEEDED WEIGHTS, WIDTHS AND SIZES!

Rolls or sheets, all sizes and widths, plain or creped 40, 50, and 60 lb. Kraft coated with 7, 10, 15 and 20 lb. Polyethylene.

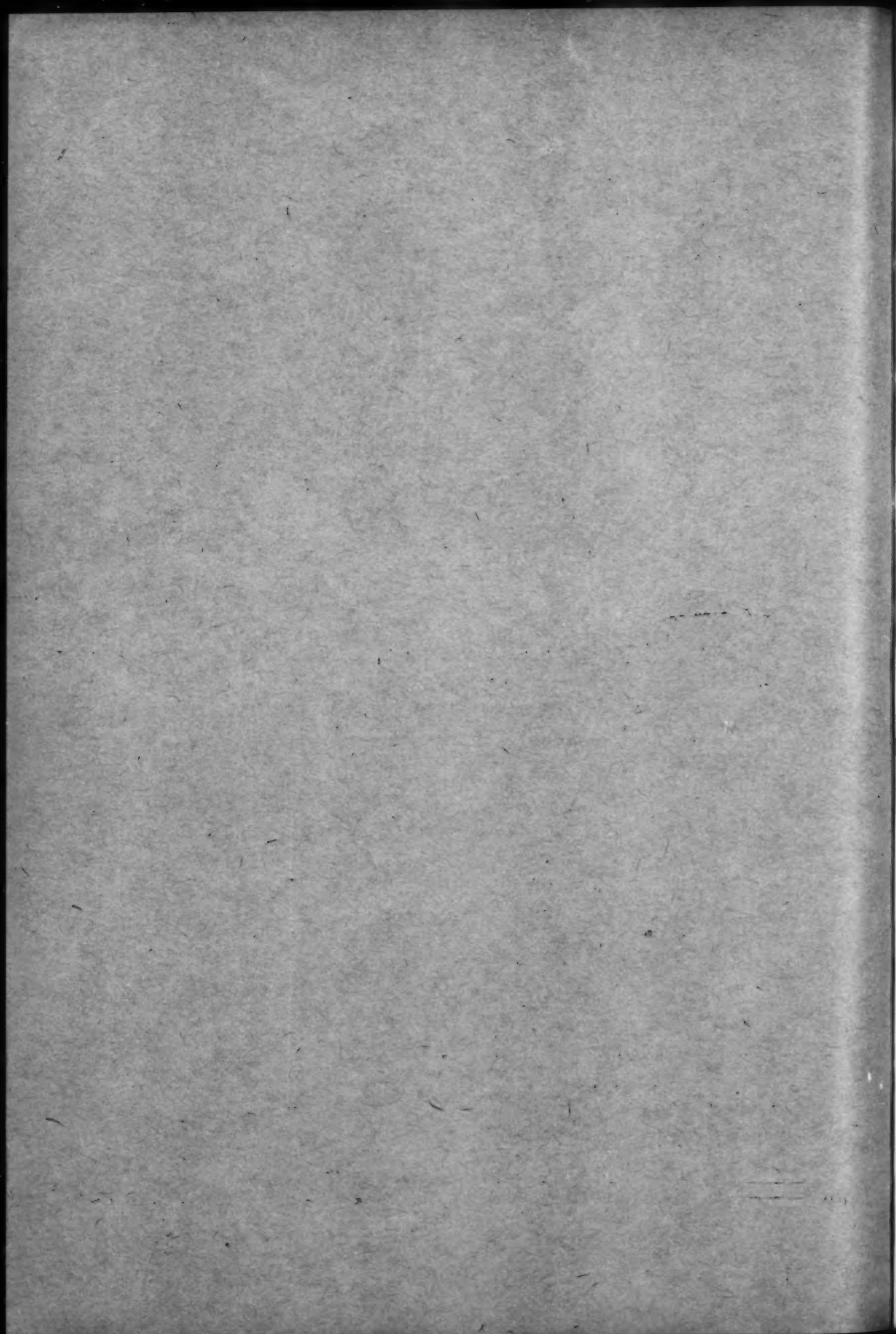
Printed on M-A Poly-Pak Nursery Wrap

McLAURIN-ANGIER COMPANY Address inquiries to Homer Sales Office, Homer, Louisiana • HEADQUARTERS: Needham Heights 94, Mass. • MILLS: Brrookfield, Ware and Framingham, Mass.; Homer, La. • OFFICES, New York, Chicago, Cincinnati, Los Angeles

ORDER FROM YOUR LOCAL PAPER MERCHANT OR NURSERY HOUSE OR WRITE US DIRECT FOR FREE SAMPLES AT HOMER, LOUISIANA

M-A
POLYETHYLENE PAPERS

XUM



tinctive and eminently useful. They will find value not only in nurserymen's newspaper advertising, but in folders and direct-mail work. Some of the subjects are designed to be cut into smaller sections for more flexible application. They will insure maximum results from minimum space. Included are drawings, stock illustrations, identification material and seasonal suggestions. These mats, it is stated, are being supplied at less than the cost to produce them.

Mats, it may be explained to any who are unfamiliar with the term, are the paper matrices used by engravers or printers to cast stereotypes—the actual metal used in the printing process. These "stereos" are relatively inexpensive to produce and can be used repeatedly.

TOUR WILLIS NURSERY

Continuing a custom of many years' standing, the members of the Kansas City Association of Nurserymen recently were guests of the Willis Nursery Co., Ottawa, Kan., with about 40 present. The event took place September 11, a beautiful sunshiny day.

The guests began arriving early in the afternoon at the Willis greenhouse and propagation establishment on U. S. Highway 59 south of town and soon were enjoying refreshments and engaging in lively conversation customary when nurserymen get together. Those who could be induced to give up the story telling were taken on tours of the nursery lasting about an hour and a half.

The delicious aroma of ribs roasting on the open pit barbecue made it difficult to wait, but eventually all were served buffet style, with all the trimmings.

The evening was topped off with an informal meeting conducted by President Frank Pflumm, of the Kansas City association, who called on a number of members to tell of their vacation experiences. J. J. P.

MOHR BROS., 7008 Troost avenue, Kansas City, Mo., who operate greenhouses and a flower shop, are planning to grow nursery stock.

UPTON E. PLESSINGER, Fallentimber, Cambria county, Pennsylvania, has taken over the nursery business that had been operated by his brother, the late Frank P. Plessinger, as Plessinger's Nurseries, at Amaranth, Pa., and will move the stock to his own nursery at Fallentimber, continuing to operate as Plessinger's Nurseries at the latter address.

UNUSUAL LANDSCAPE ITEMS

Abies balsamea	12 to 14 ft.
Albizzia julibrissin rosea	2 to 5-in. caliper
Azalea calendulacea	6 to 8 ft.
Azalea poukhanensis	5 to 6-ft. spread
Cercis canadensis	6 to 14 ft.
Cornus florida	6 to 18 ft.
Cotoneaster divaricata	4 to 6 ft.
Chamaecyparis filifera aurea	5 to 7 ft.
Chamaecyparis obtusa crippsi	7 to 9 ft.
Chamaecyparis obtusa nana	3 to 5 ft.
Fagus sylvatica	2 to 5-in. caliper
Franklinia altamaha	8 to 10 ft.
Halesia tetraptera	12 to 14 ft.
Ilex crenata	2 to 3 ft.
Ilex opaca	3 to 9 ft.
Magnolias, in variety	6 to 10 ft.
Picea glauca conica	5 to 7 ft.
Picea glauca densata	12 to 16 ft.
Picea engelmanni	8 to 12 ft.
Picea omorika	9 to 11 ft.
Picea pungens	12 to 16 ft.
Pin Oak	1½ to 7-in. caliper
Pinus flexilis	5 to 7 ft.
Pinus strobus fastigiata	12 to 18 ft.
Pinus strobus nana	3 to 5-ft. spread
Pinus strobus pendula	12 to 14 ft.
Pinus thunbergi	8 to 14 ft.
Prunus newporti	5 to 9 ft.
Red Oak	2 to 5-in. caliper
Rhododendron hybrids	6 to 8 ft.
Rhododendron maximum, clumps, approximately 15 canes	5 to 8 ft.
Stewartia pentagyna	8 to 10 ft.
Sweet Gum	2½ to 8-in. caliper
Taxus browni	5 to 6 ft.
Taxus capitata	5 to 8 ft.
Taxus hicksi	5 to 8 ft.
Taxus repandens	3 to 5-ft. spread
Tsuga canadensis	5 to 11 ft.
Tsuga caroliniana	5 to 9 ft.
Tsuga fremdi	6 to 8 ft.
Tsuga sargenti	3 to 4-ft. spread
Viburnum carlesi	2 to 6 ft.

65 acres of choice landscape material. Established 38 years. Send us your want list for quotation.

BLOOMER'S NURSERY & GARDEN CENTER
FLEMINGTON, N. J. **Phone: Flem. 155**
Rt. 69—5 miles north of Flemington

SEEDS for the Nurseryman and Forester. Write for catalog.
F. W. SCHUMACHER, HORTICULTURIST
SANDWICH, MASS.

HANKOW CORKSCREW TREE
(Salix matsudana tortuosa)

Unusual landscape addition to tree lawn or shrub border. Branches both large and small grow upward with an exotic corkscrew twist.

A charming hardy Oriental tree that will delight you and your horticulturally interested customers.

	Per Each	Per Dozen
4 to 5 ft.	$2.50	$25.00
6 to 8 ft.	3.50	35.00

BEARDSLEE NURSERY
PERRY, OHIO

RED BARBERRY
2-yr. Seedlings

We have about 50,000 nice plants to offer in 6 to 9, 9 to 12, 12 to 18 and 18 to 24 ins.

These are of very dark color, bushy material in the larger sizes. The two larger grades are good for mail orders.

Verkade's Nurseries
NEW LONDON, CONN.

The Viburnums — Plants of Many Uses

By Carl E. Kern, Sr.

Ornamental woody plants, such as the viburnums, grown for their attractive flowers, fruits and foliage, are, in the hands of the skilled plantsman or landscape designer, of great value to create beautiful and forceful composition. The genus viburnum consists of about 120 species which are native to North and Central America, Europe and north Africa, with about 70 wonderful, comparatively new introductions from eastern Asia. It is readily to be seen the genus offers a tremendous reservoir of exciting material, including plants that have always met with popular favor.

Most of the viburnums grown in parks and private home grounds today are of Asiatic origin. Many native species also possess exceptional value because of their habit of growth, foliage and soil requirements.

Europe gave Viburnum lantana, the wayfaring tree, important as a shrub of bold stature and interesting fruiting effect, from green to red to blue black; also, the old-fashioned snowball, Viburnum opulus sterile, which has been almost discarded because it is a perfect host for the black aphis. The dwarf form, Viburnum opulus nanum, is still desirable to produce a low hedge, although the plant rarely shows flowers.

Snowball Types

Among the viburnums the general public thinks immediately of the snowball type of flowers. I prefer Viburnum tomentosum plicatum, the Japanese snowball, which is free from insect pests. Of Viburnum tomentosum there are a few interesting varieties which I must mention, one of which is Viburnum tomentosum lanceatum, a more profuse bloomer than the type, with broad horizontal branches displaying both flowers and red fruits to better advantage. V. rotundifolium is also worthy of attention.

The Chinese snowball, Viburnum macrocephalum sterile, is the peer of all the snowballs in size; flowers eight inches across are borne in great profusion. Its range of hardiness is somewhat limited. Make no attempt to grow it beyond the range of zone V.

The viburnums are not particular as to soil and position, but prefer a rather moist and sunny situation. Some, as Viburnum acerifolium, lantana, dilatatum, pubescens and prunifolium, grow well in drier places. I prefer V. prunifolium next to Cornus florida for its flowering effect, fall coloring, foliage and fruit.

Once properly established, the viburnums demand little maintenance, being free of insect attacks and disease. But be cautioned, never let the plants come in contact with sulphur in any form, including summer spray, or Viburnum carlesi and its clones with lead arsenate plus a sticker, as they will drop their foliage within 36 hours.

During dry periods I have noticed that most Oriental species of viburnums are the first to show signs of distress under midwestern conditions. A liberal irrigation with water will soon bring them back to a thrifty growing state. Specimens will benefit by occasional feeding and a leaf mold mulch four to five inches in depth.

Propagation

Mass propagation of viburnums is best achieved by seeds sown in fall or stratified in sand. The behavior of these seeds is quite variable. Some, especially Viburnum sieboldi, will germinate readily in the spring. Others will not start until the following year; patience and perseverance are in order. I recommend the harvesting of the seeds at the first

---

Talk, entitled "The Viburnums," given at a conference of the Indiana Nurserymen's Association by Carl E. Kern, Sr., Wyoming Nurseries, Wyoming, O.

FINISHED MATERIAL

Taxus Vermeulen, in sizes 15 to 24 ins.
Taxus hicksi, in sizes 15 to 24 ins.
Taxus browni, in sizes 18 to 24 ins.
Ilex bullata convexa, in sizes 12 ins. to 3 ft.
Ilex crenata, 15 ins. to 3 ft.
Chamaecyparis (Retinospora) in varieties:
Pisifera, pisifera aurea, plumosa, plumosa aurea, filifera, obtusa and **lutescens.** Sizes up to 4 ft.
Thuja occidentalis elegantissima, in sizes 18 to 30 ins.
Azalea hinodegirl and **Herbert,** in sizes to 18 ins.

BED-GROWN LINERS

Azalea hinodegiri, 2-yr.	$0.25
Azalea hinodegiri, 1-yr.	.15
Ilex aquifolium femina, 2-yr.	.50
Ilex aquifolium femina, 1-yr.	.40
Ilex crenata, 2-yr.	.25
Ilex crenata helleri, 1-yr.	.15
Ilex crenata bullata convexa, 3-yr.	.25
Ilex crenata bullata convexa, 2-yr.	.20
Ilex crenata bullata convexa, 1-yr.	.15
Ilex crenata rotundifolia, 1-yr.	.15
Ilex cornuta burfordi, 2-yr.	.40
Ilex cornuta burfordi, 1-yr.	.30
Ilex opaca femina, 2-yr.	40
Ilex opaca femina, 1-yr.	.30
Taxus in varieties: **Cuspidata, browni, hatfieldi, hicksi** and **Vermeulen,** 3-yr.	.30
2-yr.	.22½
Taxus cuspidata nana, 3-yr.	.35
Taxus cuspidata nana, 2-yr.	.25

The above is only a partial list of our offerings. Write for our complete price list.

DEL-MAR-VA NURSERIES
BOX 300 LINCOLN, DEL.

BIG We have one of the largest available supplies of big specimen material, including:

TSUGA CANADENSIS
• GINKGO BILOBA
• AZALEA
• ILEX BUXIFOLIA
• ILEX OPACA
• TAXUS FASTIGIATA
• TAXUS REPANDENS
• TAXUS CUSPIDATA
• HYBRID RHODODENDRON

For 38 years one of America's leading nurseries

TOWSON NURSERIES INC.

Office and Nurseries
P. O. BOX 175, COCKEYSVILLE, MD.

VUYK VAN NES
Vuykiana Azaleas, Hardy Forcing Hybrids
Ghent & Mollis Azaleas. Hybrid Rhododendrons
Clematis. Peonies. Astilbe. Dicentra
Red Maple, Copper Beech, Fancy Shrubs.
140 Cedar Street, New York 6, N. Y.

HOLLIES
One of the most complete collections of the better named varieties of American and English holly, 3 to 6-inch pots. Field plants, 2 to 5 ft. Send for list.
ANGELICA NURSERIES
R. D. 1 MOHNTON, PA.

BOULEVARD NURSERIES
Newport, R. I.
• Quality Nursery Stock
• Lining-Out Stock
• Root-Thru Plant Pots

AZALEAS AND HEDGE PLANTS
Splendid stock.
Write for Price List.
DIAMOND STATE NURSERIES
MILFORD, DEL.

sign of approaching maturity; of course, the fleshy pulp has to be removed and treatment with Semesan given.

Propagation is also effected by softwood and half-ripe greenwood cuttings, preferably under intermittent or open-air continuous mist. Grafting, both summer and winter, may be employed on well-established understocks of Viburnum lantana, dentatum, etc., a practice which I do not recommend so long as the species in question can be grown in the vegetative manner, which means growing plants on their own roots only.

All viburnums can be increased by layering, which in some cases can be done in one growing period; others had better be carried into the second year, a practice much employed in Holland under its favorable conditions. Viburnum opulus, dentatum and trilobum can also be readily increased by hardwood cuttings in the usual manner.

The November, 1955, issue of the Morton Arboretum bulletin of popular information, a publication compiled by E. Lowell Kammerer, contains his splendid summary of the genus viburnum, according to flowers, foliage, fruit, fall color, habit of growth, persistent foliage and use in special locations, such as acid soil, dry shade, any shade or moist shade. I cannot resist the temptation to pass on this information, as follows:

FOR FLOWERS

V. burkwoodi, Burkwood viburnum (6 to 8 feet). Fragrant white flowers (E-M May); glossy semipersistent foliage of rich dark green; of erect growth.

V. carlcephalum, fragrant snowball (to 6 feet). Profuse clove-scented white flowers (May) in large globose clusters; foliage like V. carlesi; still on trial.

V. carlesi, Koreanspice viburnum (6 feet). Very fragrant pink-budded white flowers (E-M May); reddish-purple fall foliage color.

V. fragrans and variety alba, fragrant viburnum and white fragrant viburnum (8 feet). The earliest viburnum to flower (E April); flowers pink or white, sweet-scented; bush of arching habit.

V. opulus roseum (syn. sterile), snowball (8 to 10 feet). The old-fashioned snowball with white flowers in large globular clusters (L May); foliage subject to alphis damage.

V. tomentosum, doublefile viburnum (6 to 8 feet). Handsome creamy white flowers borne in flat clusters along the upper sides of the branches (L May to E June); red fruit ripening blue-black (August to September); fall color purplish red; branching habit gracefully horizontal; tender during severe winters.

V. tomentosum plicatum, Japanese snowball (8 feet). White snowball-like blooms of sterile flowers only (L May to

AZALEA ROOTED CUTTINGS

They will have a sand and peat moss ball and will be ready October through December. If spring shipment is desired add 1c to all quoted prices.

GABLE HYBRIDS	Each Per 10	Each Per 100	Each Per 1000
Mildred Mae, early, lavender	$0.09	$0.07	$0.06
Lorna, double, pink	.09	.07	....
Herbert, semidouble, red-purple	.09	.07	....
La Lumiere, single, red	.09	.07	....
Louise Gable, double, salmon-pink	.09	.07	....
Mary Ann, semidouble, pink	.09	.07	....
Caroline Gable, hose-in-hose, bright pink	.09	.07	....
VUYKIANA HYBRIDS			
Joseph Hayden, soft lilac	.09	.07	.06
Johann Strauss, rose-pink	.09	.07	....
Mozart, silver-pink	.09	.07	....
Shubert, light pink	.09	.07	....
Beethoven, mauve	.09	.07	....
Wilhelmina Vuyk, pure white	.09	.07	....
KAEMPFERI HYBRIDS			
Betty, bright pink	.08	.06	....
Fedora, bright rose-pink	.08	.06	.05
Carmen, rose-pink, compact	.08	.06	.05
Othello, red	.08	.06	....
Hinodegiri, crimson	.08	.06	.05
Hino-Crimson, crimson-red	.08	.06	.05
Maxwelli, late, crimson-red	.08	.06	....
Sherwood Red, blood-red	.09	.07	....
Amoena Superba, hose-in-hose, purple-red	.09	.07	....

A minimum of 100 of each variety to make up a 1000 rate.

The above azaleas in 2-in. pots available in the spring. Orders must be received in the fall as we only pot on order. Add 6c to the above prices.

	Each Per 10	Each Per 100
Maxwelli — Large, crimson-red. Blooms late on low compact plant. Hardy. 1-yr., X., 4 to 6 ins., bedded	$0.25	$0.20
Carmen—Rose-pink, compact. Hardy. 1-yr., X, 6 to 8 ins., bedded	.25	.20
Fedora—Large, deep rose-pink, tall. Hardy. 1-yr., X, 6 to 8 ins., bedded	.25	.20
Mary Ann—Semidouble, pink, large flower. Hardy. 1-yr., X, 6 to 8 ins., bedded	.30	.25
Hino-Crimson—Hardy, nonfading; crimson-red with glossy, dark green foliage. 1-yr., X, 4 to 6 ins., bedded	.25	.20
2-yr., XX, 6 to 8 ins., field row	.40	.30
Hinodegiri — Red flower, leaves slightly larger than Hino-Crimson. Hardy. 1-yr., X, 4 to 6 ins., bedded	.25	.20
2-yr., XX, 6 to 8 ins., field row	.40	.30
Joseph Hayden—Large, lilac-orchid flower. Hardy. 1-yr., X, 6 to 8 ins., bedded	.30	.25

	Each Per 10	Each Per 100
Viburnum carlesi (Fragrant Viburnum) 2-in. pot	$0.25	$0.20
Pyracantha coccinea lalandi (Laland Firethorn)—Deep green foliage and orange-red berries. 2-in. pot	.25	.20
Magnolia stellata Waterlily (Waterlily Magnolia) 2-in. pot	.40	.30
Franklinia alatamaha—Gordonia (Franklin's Tree). Large, single, white flowers with golden-yellow leaves. Foliage turns a bronze-crimson in the fall. Flowers appear from late August to frost. Hardy. 1-yr., 3-in. pot, 12 to 18 ins.	.40	.35

ILEX

Rooted Cuttings are available from March on.

Ilex crenata convexa—bullata (Convex-leaved Japanese Holly). One of the best of the Japanese hollies with low-spreading habit excellent for hedge, foundation planting. Round, curved hollow evergreen leaves are very attractive. It is hardy and a sturdy grower. Rooted cuttings, 4 to 6 ins.	$0.09	$0.06
(5c each per 1000) Rooted cuttings, 6 to 8 ins.	.10	.07
(6c each per 1000) 1-yr., X, 6 to 10 ins.	.16	.12
Ilex Glabra (Inkberry). A good attractive, hardy native shrub with evergreen foliage that turns dark, almost black, in winter. It has shiny black berries from September to spring. Rooted cuttings, 6 to 8 ins.	.10	.07
Rooted cuttings, 4 to 6 ins.	.09	.06

JUNIPER

Juniperus chinensis pfitzeriana (Spreading Pfitzer) Rooted cuttings, 6 to 8 ins.	$0.11	$0.09
Hetzi Glauca (Blue Hetz Juniper) Rooted cuttings, 6 to 8 ins.	.11	.09

SYRINGA

French Hybrid Lilacs

	3-yr., XX, Bare-Root	$0.50	$0.40
7	**Hugo Koster**, S., lilac, 12 to 15 ins.		
30	**Georges Bellair**, D., red, 12 to 18 ins.		
20	**Ellen Willmott**, D., white, 12 to 15 ins.		
20	**Violetta**, D., violet, 12 to 15 ins.		
14	**Charles X**, S., red, 12 to 18 ins.		
60	**Pres. Lincoln**, S., blue, 12 to 18 ins.		
100	**Ludwig Spaeth**, S., purple, 12 to 18 ins. 4-yr., XXX, Bare-Root	1.10	.85
5	**Pres. Grevy**, D., blue, 3 ft.		
20	**Leon Gambetta**, D., lilac, 18 to 24 ins.		
10	**Georges Bellair**, D., red, 2 to 3 ft.		
40	**True Blue**, blue, 2 to 3 ft.		
50	**Ruhm Von Horstenstein**, S., red, 2 to 3 ft.		
50	**Ludwig Spaeth**, S., purple, 2 ft. and up		
25	**Katharine Havemeyer**, D., pink, 2 ft. and up		
35	**Jan Van Tol**, S., white, 2 ft. and up		
7	**Mrs. Ed Harding**, D., red, 2 ft. and up		

MALUS ROOT GRAFTS

Flowering Crap Apple. All shipments will be made between March 1 and April 1.

Each per 10, 15c; each per 100, 12c

Variety	Color	Type	Foliage	Fruit
Eleyi	purple-red	single	purple-red	purple-red
Atrosanguinea	red and white	single	green	red
Floribunda	pink and white	single	green	yellow-red
Theifera	pink	single	green	yellow-red
Hopa	purple-red	single	purple-red	orange-red
Dolgo	white	single	green	brown-red
Sheideckeri	pink	double	green	yellow-orange
Micromalus	pink	single	green	green-yellow
Arnoldiana	rose and white	single	green	yellow
Parkmani	pink	double	green	red

Price list sent on request.

5% cash discount on all orders with full payment. Packing is free when cash is sent with order. 25% cash sent with order, balance plus packing charges paid C.O.D. If parcel post is desired, enclose 10% of order. Balance to be refunded.

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HELEN HAYES

This semidouble, luminous, peaches-and-cream colored hybrid tea, with its outstanding glossy foliage, practically free from thorns, has been the sensation of the display gardens this season. Write for colored catalogs of Hybrid Teas, Climbers, Creepers and the new Everblooming Pillars.

BROWNELL ROSES

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CHOICE AMERICAN, ENGLISH AND CHINESE HOLLIES

10 to 18 ins. tall from 4-in. pots.

	Each
AMERICAN HOLLIES	
Arden	$0.95
Selected heavy fruiter	.95
Thompson	.95
Males	.95
Pairs, male and female together	1.60
CHINESE HOLLIES	
Cornuta, males	.95
Cornuta, females	.95
Cornuta burfordi	.95
Pedunculosa, seedling	1.60
ENGLISH HOLLIES	
Ciliata major	1.25
Belgica	1.25
Alcicornis	1.25
Fisher	1.25
Marnocki	1.25
W. J. Bean	1.25
Males	1.25
Medio-picta	1.60
Wilson	1.75
Pairs, male and female potted together	2.00
From 3-in. pots to 5 to 8 ins.	
Ciliata major	.65
Alcicornis	.45
Marnocki	.55
W. J. Bean	.55
Fisher	.55
Males	.45

WILMAT HOLLY CO.

302 State Rd. GLADWYNE, PA.

E June); bright green deeply veined leaves; fall color dark red to purplish bronze; graceful shape; tender during severe winters.

FOR FOLIAGE

V. burkwoodi (see For Flowers).

V. rhytidophylloides, lantanaphyllum viburnum (8 to 10 feet). Semievergreen, deeply veined foliage persisting well into the winter; flowers creamy white (L May to E June); fruit red changing to black; hardier than rhytidophyllum.

V. rhytidolphyllum, leather-leaved viburnum (6 feet). Bold textured, dark, almost evergreen foliage, which droops during cold weather; tender in the Chicago area; prefers shade.

V. rufidulum, rusty black haw viburnum (8 to 10 feet), often arborescent in the south). Very glossy dark green leaves; handsome dark blood-red fall color; pure white flowers (L May to E June); fruits white, ripening dark blue.

V. sieboldi, Siebold viburnum (8 to 10 feet, occasionally taller). Bold lustrous leaves of bright green; fall color purplish russet; creamy flowers (L May to E June); attractive salmon-pink fruit on red pedicels, ripening black; of interesting erect branching habit.

FOR FRUIT

V. cassinoides, withe-rod viburnum (6 feet). Spectacular multicolored fruit clusters (August to September), consisting of yellow, green, pink and blue-black fruits; shiny green foliage turning orange red and purplish in the fall; likes moisture.

V. dentatum, arrowwood viburnum (to 12 feet). Bright blue fruit (September to October); white flowers (L May); purplish-red autumn foliage color; shade tolerant.

V. dilatatum, linden viburnum (to 8 feet). Persistent bright red fruit in showy clusters (September); white flowers (L May to E June); autumn color russet-red; a compact bushy shrub; somewhat tender.

V. lantana, wayfaring tree viburnum (to 15 feet). One of the most spectacular fruiting species, pale yellow, pink, red and blue-black fruits often appearing in the same cluster (August to September); foliage remains green till late, eventually turning reddish purple; tolerates dry situations; bush of rounded outline.

V. opulus xanthocarpum, yellowfruit European cranberry bush viburnum (10 feet). Abundant, showy bright yellow fruit (October); fall foliage color clear yellow; a compact round-headed bush.

V. rufidulum (see For Foliage).

V. sargenti flavum, yellowfruit Sargent cranberry bush viburnum (10 to 12 feet). Produces generous clusters of golden yellow fruit (October); fall color orange; attractive flower clusters (L May); a bush of imposing stature.

V. setigerum, tea viburnum (8 to 10 feet). Oval orange to bright red fruit on reddish pedicels (October); foliage narrow; tender.

V. sieboldi (see For Foliage).

V. trilobum, American cranberry bush viburnum (8 to 12 feet). Large, long-stemmed orange to scarlet fruit in droop-

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1/2 to 12-in. cal.

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We have available some of the BEST GROWN TREES in the east, in large quantities.

Quercus palustris, 5 to 6-in., 3 to 3½-in., 2½-in., 2-in. and 1½ to 1¾-in. cal.

Gleditsia triacanthos, 6 to 7-in., 4 to 5-in. and 2 to 2½-in. cal.

Platanus acerifolia, 4 to 5-in., 3½ to 4-in. and 3 to 3½-in. cal.

Quercus phellos, 3½ to 4-in., 3 to 3½-in., 2½ to 3-in. and 2 to 2½-in. cal.

Malus (Flowering Crab Apple), **Hopa, Red Silver, Floribunda, Eleyi,** heavy specimen, 6 to 8 ft. and 8 to 10 ft.

French Hybrid Lilac, heavy, 5 to 6 ft.

Pinus resinosa, 12 to 14 ft. and 10 to 12 ft.

Taxus hicksi, 2 to 2½-in., 2½ to 3-in. and 3 to 3½-in. cal.

For quotations mail us your want list. Your inspection invited. Phone for appointment.

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TEUCRIUM CHAMAEDRYS

	Per 100	Per 1000
Top size	$18.00	$150.00
Medium grade	12.00	100.00
Well-rooted cuttings	5.00	45.00

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WILLIAM CROSBY HORSFORD

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ing clusters (August into the winter); white flowers (L May to E June); orange-yellow to reddish-purple fall color.

V. trilobum Andrews, Hahs and Wentworth (8 to 12 feet). Dual purpose horticultural varieties grown for their large edible orange-red fruit (August into the winter).

FOR FALL COLOR

V. acerifolium, mapleleaf viburnum (to 6 feet). Shows an exceptional fall foliage color range, which includes ivory and creamy yellow through purple and crimson; tolerates shade and drought; demands an acid soil.

V. cassinoides (see For Fruit).

V. dentatum (see For Fruit).

V. lentago, nannyberry viburnum, sheepberry (12 to 30 feet). Brilliant reddish-purple fall color; white flowers (L May to E June); bright blue fruit, ripening black, in drooping clusters (September, October and into the winter); forms thickets; useful in moist shade.

V. molle, Kentucky viburnum (to 12 feet). Autumn foliage coloring similar to that of the arrowwood viburnum; leaves larger, however, and pubescent beneath; flowers white (L May); has interesting peeling bark, revealing shiny undersurfaces.

V. nudum, possom haw viburnum (8 to 10 feet). Lustrous large leaves, assuming brilliant red fall color; white flowers (E June); blue-black fruit (September); a bush of excellent habit.

V. prunifolium, black haw viburnum (to 15 feet). Glossy deep green foliage turning yellow, scarlet and purplish in fall; white flowers in flat clusters (E May); large blue-black fruit (September to October); a pleasing rounded bush sometimes becoming treelike.

V. pubescens, downy viburnum (to 9 feet). Fall foliage color brilliant reddish purple; late white flowers (L June); blue-black fruit, (September to October; very tolerant of dry locations.

V. trilobum (see For Fruit).

FOR FORM OR INTERESTING HABIT OF GROWTH

V. opulus nanum, dwarf European cranberry bush viburnum (18 inches to 2 feet). Very compact rounded bush with small foliage; rarely flowers; foliage subject to aphis damage.

V. sieboldi (see For Foliage).

V. tomentosum (see For Flowers).

V. tomentosum plicatum (see For Flowers).

FOR INTERESTING BARK

V. molle (see For Fall Colors).

FOR PERSISTENT FOLIAGE

V. burkwoodi (see For Flowers).

V. rhytidophylloides (see For Foliage).

V. rhytodophyllum (see For Foliage).

FOR SPECIAL LOCATIONS

Acid Soil

V. acerifolium (see For Fall Color).

V. alnifolium, hobblebush viburnum (5 to 10 feet). White flowers in large flat clusters (May); bold round foliage, turning reddish in autumn; red fruit ripen-

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We have a fine block of 1000 nice Pyramidal American Arborvitae, mostly 3 to 4 ft.

	Each
2 to 3 ft., B&B	$3.00
3 to 4 ft., B&B	4.25
4 to 5 ft., B&B	5.50

15% discount for a truckload of 100 or more.

Also several hundred **Pfitzer Juniper,** 4 to 5 ft., B&B, **$7.50.** Just right for big landscape jobs.

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250,000 **Rosa multiflora japonica,** cuttings, 5 to 10-mm. cal., nice, well-graded understock.

75,000 **Rhododendron Hybrids,** in many hardy varieties, red, pink, white—1-yr. grafts.

25,000 **Philadelphus coronarius aureus** (Golden Mock Orange), nice transplanted cuttings, 8 to 12 ins.

5,000 **Acer Faassen's Black,** 1-yr. whips, 4 to 5 ft. and 5 to 6 ft.

THIS OFFER IS ONLY GOOD FOR TWO WEEKS

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12 to 15 ins.	$60.00	$550.00
15 to 18 ins.	75.00	650.00

Write for complete trade list.

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MENTOR, O.

ing black; very difficult except in acid soil; prefers shade and moisture.

DRY SHADE

V. acerifolium (see For Fall Color).
V. lantana (see For Fruit).
V. opulus, European cranberry bush viburnum (to 12 feet). Abundant white flowers (L May to E June); decorative bright scarlet fruit (August to September, persisting through the winter); orange-red fall color; very tolerant of dry situations.
V. prunifolium (see For Fall Color).
V. pubescens (see For Fall Color).

ANY SHADE

V. dentatum (see For Fruit).
V. lentago (see For Color).
V. molle (see For Fall Color).
V. sieboldi (see For Foliage).

MOIST AREAS

V. alnifolium (see Acid Soil).
V. cassinoides (see For Fruit).
V. dentatum (see For Fruit).
V. lentago (see For Fall Color).
V. nudum (see For Fall Color).

Carl E. Kern, Sr.

KANSAS CONVENTION

[Continued from page 11]

oaks the presence of the disease is indicated by the leaves turning brown in the summer, then curling upward and falling off the trees. There is a brown streaking of the sapwood. The trees die the same year these symptoms appear.

In the white, bur, yellow and chestnut oaks the first symptom of oak wilt is the death of possibly a single branch, to be followed by the death of more and more branches in subsequent seasons. Several years may elapse before the tree dies.

Because drought, lightning and other causes may result in similar symptoms, positive identification can be made only by diagnosing the branches of dying trees in the laboratory.

New Turf Grasses

"New Turf Grasses" was the subject of a talk by Dr. Ray Keen, Kansas State College. One of the newer Bermuda grasses that has proved satisfactory in Kansas is U_3, which is much superior to the common Bermuda. Another is Sunturf, which originated in Tennessee. It seems to be free from diseases and retains a dark green color even on soils low in nitrogen.

Zoysia matrella grows too slowly in Kansas to be practical as a lawn grass. Emerald zoysia also grows slowly. It is necessary to plant plugs on 6-inch centers to insure coverage in one season. It probably is not hardy very far north. Meyer zoysia will make an unbroken turf in one season if planted on 12-inch cen-

ters. It is known to be hardy into Nebraska.

Merion, one of the newer bluegrasses, is subject to rust in the test plots at Kansas State College. Another new strain of bluegrass from the Missouri Botanical Garden, known as Arboretum, has a fine texture and shows considerable promise. Minnesota No. 95 bluegrass resembles Merion but is taller and has given fairly good results.

Kentucky 31 fescue is a tall, coarse, tough grass that will withstand heavy traffic. For this purpose, a mixture of two-thirds fescue and one-third bluegrass is recommended.

Dr. Keen pointed out that the new vegetative grasses such as the Bermudas and zoysias had taken some of the business away from seedsmen and brought more nurserymen into the lawn business, because these grasses are propagated and grown in nurseries. Further information on turf grasses will be found in the publication, "Lawns in Kansas," written by L. R. Quinlan and Ray Keen and published by the Kansas State College as circular No. 327.

Garden Center Merchandising

After the noon luncheon, Ellary Bennett discussed "Nursery Merchandising Today," based on his personal experience as manager of the large Chesmore garden center at St. Joseph, Mo. Mr. Bennett has found that self-service works well with small items; in fact, it results in more sales of such items. Everything is clearly marked with prices and other essential information. Baskets and carts are provided for the convenience of customers who prefer to serve themselves.

The Chesmore garden center is so planned that the customer must go through the garden shop to get into the lath house. In the garden shop the taller displays are along the outside walls, and displays in the center are lower, so one can see over them. Overhead signs help customers to locate various kinds of merchandise.

Evergreens and potted shrubs and roses are kept in the lath house. As many items as possible are potted for ease in handling. Dormant bareroot stock is kept in the basement, which can be entered only through the garden shop. Mr. Bennett would like to offer two or three sizes of everything, but does not have enough room. If only one size is offered, it should be a good grade, such as No. 1 roses, 2 to 3-foot shrubs and 11/16-inch fruit trees.

Shingletow has proved better than sawdust for protecting bare-root plants in bins, and the plants can be

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		Plane Each	Steamer Each
5000	**Rhododendron Hybrids,** 1-yr., grafts, well-rooted, field-grown, in mostly hardy red varieties (best)	$0.60	...
2500	**Acer Faassen's Black,** 1-yr., grafts, whips, 5 to 6 ft.	1.50	$1.30
	Acer Faassen's Black, 1-yr., grafts, whips, 4 to 5 ft.	1.25	1.00
5000	**Cotinus rubrif.,** best red strain, nice T., liners, 12 to 18 ins.	.33	...
8000	**Deutzia scabra plena,** 2-yr., T., C., heavy, 3 to 4 ft.	...	.32
2000	**Fagus sylvatica riversi,** 1 to 2-yr., grafts, 18 to 24 ins.	.95	.80
	Fagus sylvatica riversi, 2-yr., grafts, 2 to 3 ft.	1.40	1.20
7500	**Philadelphus aureus,** nice T., C., 10 to 12 ins.	.15	...
6000	**Philadelphus grandiflorus,** 2-yr., T., C., heavy, 3 to 4 ft.	...	.32
50,000	**Rosa multiflora japonica,** well-graded, 5 to 10 ins.	...	.35
4000	**Spiraea macrothyrsa** (Big Plume Spiraea), 2-yr., T., C., heavy, 3 to 4 ft.	...	.32
5000	**Syringa vulgaris hybrids, French Lilacs,** 2-yr., grafts, 12 to 18 ins.	.40	...
	Syringa vulgaris hybrids, bushy, 2 to 3 ft., 3 to 5 strong branches	.75	.55
4000	**Viburnum juddi,** nice T., C., 8 to 12 ins.	.33	...
	Viburnum burkwoodi, T.	.32	...

F.O.B. New Jersey, packing at cost. Above prices per 1000. 3% for cash with order. Minimum order $100.00. Ask for catalog and rhododendron price list.

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$5.00 per 100, **$45.00** per 1000.
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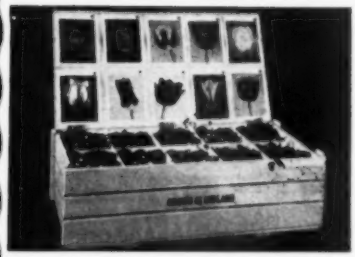

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STASSEN FLORAL GARDENS, Inc.
Dept. 31, Roslyn Heights, N.Y.

LINING-OUT STOCK

	Per 100	Per 1000
Washington Hawthorn		
6 to 9 ins., S.	$ 7.50	$ 65.00
2-yr., 9 to 12 ins.	15.00	125.00
2-yr., 12 to 18 ins.	22.50	200.00
Kolkwitzia (Beauty Bush)		
9 to 12 ins., T.	15.00	125.00
12 to 18 ins., T.	22.50	200.00
Cotoneaster divaricata		
12 to 15 ins., T.	17.50	150.00
Elaeagnus angustifolia		
6 to 12 ins., S.	5.00	35.00
12 to 18 ins., S.	6.50	50.00
Pyracantha angustifolia		
1-yr., S., R.P.	10.00	85.00
Photinia villosa		
1-yr., S., R.P.	7.50	65.00
Rhodotypos scandens		
6 to 12 ins., S.	7.50	65.00
12 to 18 ins., S.	10.00	85.00
Sorbus aucuparia		
12 to 18 ins., T.	15.00	125.00
Viburnum dentatum		
6 to 9 ins., S.	7.50	65.00
12 to 18 ins., S.	12.50	100.00
Viburnum lantana		
2-yr., 6 to 12 ins., S.	10.00	85.00
2-yr., 12 to 18 ins., S.	15.00	125.00
Viburnum lentago		
6 to 9 ins., S.	7.50	65.00
Viburnum opulus		
6 to 9 ins., S.	10.00	85.00
Viburnum tomentosum		
12 to 18 ins., T.	17.50	150.00
Pyramidal Arborvitae (Thuja occidentalis)		
T., S.	17.50	150.00
Mahonia aquifolium		
9 to 12 ins., T.	30.00	250.00

NEWPORT NURSERY CO.
NEWPORT, MICH.

removed more easily. Single-deck bins are used for the taller stock, double-deck for the shorter plants. There are pictures and prices on all bins. Walks are surfaced with fine rock.

Mr. Bennett has found that potted roses and shrubs give a big boost to summer sales. He pots the plants in February, places them in coldframes, mulches lightly and covers with Celloglass tacked on frames. Roses are cut back to six inches.

Mr. Bennett employs all the usual advertising mediums — newspapers, radio, television and direct-mail. He stated that it is difficult to determine which gave best results. Both newspaper advertising and direct mail gave tangible results, but he was not so certain about the return from radio. Television, while expensive, gave good results. He believes in live shows, staged outdoors, if possible, so demonstrations can be given.

Forum on Selling

After Mr. Bennett's talk, there was a merchandising forum and panel discussion on selling. In addition to Mr. Bennett, the panel consisted of Ralph Ricklefs, Sr., Kansas Landscape & Nursery Co., Salina; Robert Quin, Tobin Seed Co., Kansas City, Mo., and Don Roepke, J. H. Skinner & Co., Topeka.

Mr. Ricklefs brought up the problem faced by mail-order nurserymen due to increased postage rates. The increases affect not only the cost of mailing catalogs, but add to the cost of delivering nursery stock to the customer. The problem is particularly acute when the orders are small and the plants too large to go by parcel post.

Mr. Quin called attention to the tremendous increase in the number of garden centers in the midwest during the past few years. He attributed the situation, at least partially, to the fact that garden-minded folks like to buy their nursery stock and all related items in one place—the supermarket idea.

The trend in garden centers is toward self-service, stated Mr. Roepke, but most customers still like to have some help in making their selections.

Many nurserymen are too price-conscious and worry about competition. If one offers only good merchandise, he will have no trouble getting good prices for it, it was stated.

CURRIE SEED CO., Corpus Christi, Tex., has installed redwood walks throughout the nursery and a large patio for plant display.

STRAWBERRY PLANTS

Fall. 1956 Spring. 1957

We offer a dependable source of supply for resale or planting stock. Plants ready for shipment October 15 to June 1. Dormant stock can be furnished for late spring shipment if desired. Varieties starred (*) are from virus-free mother stock and all varieties have been treated and sprayed for elimination of insects, nematodes and virus carriers. All stock double inspected for Red Stele. Prices below are for 1000 plants, packed 25 to bundle, each bundle labeled true to name. No charge for packing. Prices are F.O.B. Farmington, Ia.

	Price Per 100
Superfection Everbearing	$17.00
Streamliner Everbearing	16.00
Gem Everbearing	15.00
June Bearers	
Iowa Beauty, our '57 introduction	18.00
***Vermilion**	10.00
Pocahontas	12.00
Fairland	10.00
Empire	12.00
Paymaster	16.00
***Tennessee Beauty**	11.00
Wisconsin 214	11.00
Wisconsin 261	11.00
***Armore**	10.00
***Premier**	10.00
***Bellmar**	10.00
***Blakemore**	9.00
***Robinson**	8.50
Beaver	8.50
***Dunlap**	8.00

For prices on larger amounts write for special quotations. We also have free for distribution a complete wholesale catalog with prices on our pack-out service on a general line of nursery stock.

THE RIDER NURSERIES
FARMINGTON, IA.

LINERS

2 and 3-year
Boxwood
Lilacs
Shrubs
Taxus

FINISHED STOCK

Azalea mollis
Buxus sempervirens
Euonymus vegetus
Ilex convexa
Thuja pyramidalis

Send for our price list now!

LITTLE MOUNTAIN VIEW NURSERIES
MENTOR, O.

Hydrangea P. G.
Hydrangea P. G. (Tree Form)
Ornamental Trees
Grapevines, 1-yr.

Thorne Brewster

WILLOWBEND NURSERY
PERRY, O.

GRAPE CUTTINGS

	Per 1000
Concord	$5.00
Niagara	5.50
Delaware	5.50

Wire bound 100 to bunch. Order now. No orders after December 1. Scion wood state inspected.

PAW PAW PLANT CO.
PAW PAW, MICH.

Scarff's Nursery, Inc. New Carlisle, Ohio

Special List — Top-Quality Stock — Finest Miami Valley Grown —

	Per 100
Barberry (Red), 3-yr., field, 24 to 30 ins.	$50.00
Calycanthus floridus, 24 to 30 ins.	55.00
Caryopteris incana (Blue Mist), 2-yr.	35.00
Cornus elegantissima, 2 to 3 ft.	60.00
Cornus kelseyi (Dwarf Red Twig), 18 to 24 ins.	50.00
Cotoneaster divaricata, 2 to 3 ft.	90.00
Cydonia japonica (Pink), 2 to 3 ft.	50.00
Deutzia lemoinei Compacta, 24 to 30 ins.	50.00
Euonymus alatus, 2 to 3 ft.	85.00
Euonymus carrierei, 18 to 24 ins.	75.00
Euonymus yedoensis (Bittersweet Tree), 36 to 42 ins.	60.00
Forsythia Arnold Dwarf, 15 to 18 ins.	40.00
Forsythia Lynwood Gold, 3 to 4 ft.	50.00
Forsythia spectabilis, 3 to 4 ft.	50.00
Hamamelis vernalis, 36 to 42 ins.	60.00
Hydrangea A. G., 24 to 30 ins.	45.00
Hydrangea P. G., 2 to 3 ft.	55.00

Hypericum kalmianum (Pot O' Gold). Profuse-blooming, hardy and widely adaptable. A most attractive dwarf, compact shrub with silvery-blue foliage. Per 100
15 to 18 ins. $40.00
18 to 24 ins. 45.00

Kolkwitzia amabilis, 3 to 4 ft.	60.00
Lonicera fragrantissima, 3 to 4 ft.	60.00
Lonicera Gold Flame, 2-yr. vine	40.00
Lonicera maximowiczi sachalinensis, 2 to 3 ft.	45.00
Lonicera zabeli, 3 to 4 ft.	50.00
4 to 5 ft.	65.00
Ligustrum, Regel's, true type, 24 to 30 ins.	$35.00
Ligustrum Vicary Golden, true, best color, 12 to 15 ins.	35.00

Malus Almey (Red). One of the most striking Red Flowering Crab Apples. Fiery-red blossoms almost striking Red-flowering Crab 2-yr. trees, 5 to 6 ft.,
10 rate, each $1.75
(100 rate, $1.60 each)

Prunus tomentosa, 2 to 3 ft.	40.00
Rhodotypos kerrioides, 2 to 3 ft.	50.00
Spiraea Anthony Waterer, 18 to 24 ins.	50.00
Spiraea prunifolia, 3 to 4 ft.	50.00
Spiraea thunbergi, 2 to 3 ft.	45.00
Spiraea vanhouttei, 3 to 4 ft.	50.00
Viburnum americanum, 3 to 4 ft.	75.00
Viburnum burkwoodi, S., 30 to 36 ins., B&B.	225.00
Viburnum carlesi, 2 to 3 ft., B&B.	275.00
Viburnum lantana, 2 to 3 ft.	50.00
Viburnum lentago (Nannyberry), 3 to 4 ft.	50.00
Viburnum prunifolium (Blackhawk), 2 to 3 ft.	40.00
Viburnum wrighti, 2 to 3 ft.	45.00
Willow, French caprea, 1-yr., 2 to 3 ft.	30.00
2-yr., 4 to 5 ft.	50.00

Quantity prices on request. Our wholesale price list contains many other varieties. Send for your copy today.

LINING-OUT STOCK
Quantity Prices on Request.

	Per 100
Barberry, Crimson Pygmy, 2-yr., T., 4 to 6 ins.	$35.00
*Cherry, Weeping, 2-yr., S., 2 to 3 ft.	40.00
Euonymus alatus, 2-yr., T., 9 to 12 ins.	17.50
Euonymus yedoensis, 2-yr., T., 12 to 15 ins.	15.00
Hydrangea macrophylla rosea, 1-yr., T.	25.00
(New French—Large Pink)	
Kerria japonica, 2-in. pots	10.00
*Kolkwitzia amabilis, 2-yr., T., 18 to 24 ins.	22.50
*Koelreuteria paniculata (Golden-Rain), 2-yr., S., 18 to 24 ins.	25.00
Ligustrum, Regel's, C., 6 to 9 ins., T.	12.50
Ligustrum Vicary Golden, best golden, R.C.	10.00
Pyracantha Runyan Red, T., 6 to 9 ins.	30.00
Rhus cotinus, S., 9 to 12 ins.	12.50
*Viburnum burkwoodi, 2-yr., S., T., 18 to 24 ins.	30.00
*Viburnum tomentosum, S., 6 to 12 ins.	12.00
*Viburnum wrighti, 2-yr., S., 12 to 15 ins.	15.00
*Arborvitae (Dark Green), 2-yr., T., 10 to 15 ins.	35.00
2½-in. bands	22.50
Boxwood, Korean, T., 6 to 9 ins.	30.00
Juniper, Andorra, T., 9 to 12 ins.	22.50

*These items are good size for mail order and wrapping.

SMALL FRUIT PLANTS
We have our usual good supply of Berry Plants. See our Trade List or send us your want list for quotation.

Send for Complete Trade List and Prices of Fruits, Ornamental Shrubs, Vines, Evergreens, Special Mail-order Items and Lining-out Stock.

OLDEST TREES

Reported in California is a new group of trees declared to be the oldest of living things. They are three bristlecone pines, 15 to 30 feet tall, located 20 miles northeast of Bishop, Calif. Dr. Edmund Schulman, head of the tree ring research laboratory of the University of Arizona, estimates the age of the trees at 4,000 years, 1,000 years older than California's giant sequoias. This estimate was based on detailed countings of the trees' rings, which were checked off, year by year, by taking borings and examining them under the microscope. Dr. Schulman was assisted in his work by C. W. Ferguson from the university.

ESPALIER trees were shown on the WCAU-TV Farm Reporter program September 21. Owen B. Schmidt, F. D. Moore & Sons, Narberth, Pa., and James K. Rathmell, Jr., floricultural and nursery agent, Pennsylvania State University, State College, discussed the methods and showed how an apple tree is pruned for espalier shap. Two fruit trees from the F. D. Moore & Sons Nursery were used on the program. Bill Bennett, WCAU-TV farm director, showed one of the trees on the "Mr. and Mrs." show.

MULTIFLORA ROSE

(Rosa multiflora japonica)

Conservation grade, 3 mm.	Per 1000
8 to 12 ins.	$13.50
2/16 to 3/16-in. cal., 10 to 15 ins.	18.00
3/16 to ¼-in. cal., 15 to 18 ins.	24.00
¼ to ⅜-in. cal., 18 to 24 ins.	36.00

Plants will be top and root trimmed prior to shipping. All prices F.O.B. Elsberry. No packing charge.

Write for Quantity Prices

You will find us your best source of Multiflora whether you need a few plants or a few million.

MISSOURI GROWN IS HARDY...

FORREST KEELING NURSERY
ELSBERRY, MISSOURI

TAXUS CUSPIDATA

18 to 24 ins., TT.
24 to 30 ins., TTT.
30 to 36 ins., TTT.
Juniper, pfitzeriana, 24 ins.

CASSINELLI'S GLENDALE NURSERIES, INC.
GLENDALE, Hamilton Co., OHIO
12 miles north of Cincinnati

NEOSHO NURSERIES COMPANY **Neosho, Missouri**

Send want list for prices on roses, evergreens, shrubs, fruit and shade trees. Hybrid Elm a specialty.

The Pleasures of Being In the Nursery Business

By Edwin J. Stark

In spite of the fact that we as nurserymen have to contend with droughts, insects, trade barriers and many other obstacles too numerous to mention, I still feel we are fortunate to be in the most interesting business in the world. As one travels around the country and visits the different nurseries, he finds that nurserymen have outstanding families, good land and good houses and drive every kind of a car from a Cadillac on down, and furthermore, the nurserymen seem to be living "high on the hog."

In order to accent the good points in being a nurseryman, I should like to name a few of the benefits which we accept without realizing what they mean to us:

No. 1—Gardening is America's leading hobby today, according to Sales Management mazagine, and in the past five years gardening has sprouted from a billion-dollar business to a 4 billion dollar business.

For example, the growing market shows the following increases in the past five years: Power mowers—1946, $17,000,000; 1955, $181,000,000; nursery stock—1950, $365,000,000; 1955, $700,000,000, and summer furniture—1948, $87,000,000; 1955, $254,000,000.

By leaf-raking time the average American family may be expected to have spent $83 for plants, seeds, tools and accessories for gardening. The following are typical expenditures per family. Power lawn mowers, $3.80; summer furniture, $5.30; outdoor power tools, $4.20; barbecue equipment, 70 cents; pesticides, $1.75, and fertilizers, $3.45.

No. 2—The nursery industry is one of the few which sells a product that increases in value from the day one makes the purchase. In most cases any item that a customer purchases decreases 25 to 50 per cent in value immediately on delivery. A customer who purchases a tree, shrub or rose would not take 10 times the purchase price five to 10 years after planting.

No. 3—No improvement on a piece of property will increase the value $1,000 to $1,500 with an expenditure of $100 to $150, except in nursery stock.

No. 4—The proper planting of trees and shrubs around the house and grounds can help control the temperature in summer and winter.

No. 5—Planting of the outdoor living room provides a place where the family can relax and enjoy the barbecue pit. I am sure everyone has noticed how much better the food tastes and how much more he can eat when the food is prepared in the open.

No. 6—It has been said that working with plants and flowers does more to relieve tension than any other type of work or hobby. This is especially important when businessmen are in such a hurry they run up escalators with their brief cases and take millions of sleeping pills every night to relieve the tension and strain of the day's problems.

No. 7—Did you ever stop to think what a dismal place this old world would be without the trees, shrubs and roses that are grown by nurserymen?

No. 8—I should say that every nurseryman should be happy to be in a business which is making the world a better place in which to live and is not trying to find some ways and means to destroy mankind and all the beauty that goes to make up the world.

Are not these points reasons for a feeling of pride that we are in the nursery business?

Bases for National Stature

Here are some of the reasons why America is a great country:

1—Salesmanship. We are constantly selling something. It has been said if we are to maintain our way of life and prevent recessions and depressions, it must be done by salesmanship. A salesman is an ambassador of world economy and where he goes, he leaves the people better off.

2—A free flow of goods between states and as few trade barriers as possible. The nurserymen have worked to prevent state trade bar-

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Excerpts from an address, "The Pleasures of Being in the Nursery Business," given by Edwin J. Stark, Stark Bros. Nurseries, Louisiana, Mo., at a meeting of the Alabama Nurserymen's Association.

HEAVY SHRUBS SPECIALS

	Per 100
Barberry, thunbergi atropurpurea, red	
12 to 15 ins.	$27.50
15 to 18 ins.	32.50
18 to 24 ins.	40.00
24 to 30 ins.	55.00
Honeysuckle, zabeli	
2 to 3 ft.	27.50
3 to 4 ft.	35.00
4 to 5 ft.	42.50
Amur River North Privet	
18 to 24 ins.	10.00
2 to 3 ft.	15.00
3 to 4 ft.	20.00

Write for catalog.

BORK NURSERY
ONARGA, ILL.
Phone: AMherst 8-7267

FALL, 1956
Evergreens
Shrubs
Shade Trees
Fruit Trees

Amur River Privet, all sizes up to 3 to 4 ft., 3-yr., twice cut back.

Barberry Mentorensis, up to 2 to 3 ft.

Special price quantity lots.

C. M. HOBBS & SONS, INC.
BRIDGEPORT, IND.
Established 1875

GOOD
NURSERY STOCK
AS WELL AS
ROSES
GERARD K. KLYN, Inc.
MENTOR, O.

riers. These are probably one of the major causes of war in Europe and other parts of the world.

3—Transportation. The strides we have made in transportation are fantastic. In 1849 it took six months to go to California from St. Joseph, Mo.; today it takes only a few hours, and in one or two years, today's timetables will probably be like the horse and buggy times now.

I should like to mention what the future holds for the nurseryman.

America is growing every day, and in the next 12 months there will be 4,000,000 new babies in the United States. This is the equivalent of adding another state the size of Missouri every 365 days.

In addition to this great increase in population, we must have more of everything, such as houses. It has been said: "The home is the backbone of America" and "It is not a home until it is planted."

In the past year, we built 1,300,000 houses, and this year we will probably build 1,100,000, which is a sizable figure. So the nurserymen have plenty of opportunity to sell nursery stock. It is going to require salesmanship, for the day of the order taker is gone.

Just a word of caution—do not propagate more than you know you can sell.

Going back to the increase in population: The shift in population that lies ahead will have more effect on business volume and new problems in government than the population itself. The over-all increase in population in the United States will be 38 per cent; the larger cities will grow only 16 per cent, while the suburban area will increase 85 per cent.

For an example close to home—Birmingham proper in the next 20 years will grow 17 per cent, while the outlying area will increase 39 per cent. For the state of Alabama, the 20-year population gain will be 776,000.

The business is there if we go after it. It has been said the average man uses only 10 per cent of his ability, which reminds me of the comparison between an average ball player and a star. It is said the average big league ball player earns roughly $7,000 a year and bats around .250, but stars like Musial and Williams earn $80,000 to $100,000 per year and bat .350. The only difference between the average player and the star is the latter hits the ball once more out of 10 times at the bat, which increases his salary and batting average.

PLANT MATERIAL

	Medium	Heavy
Cornus florida (White-flowering Dogwood)		
3 to 4 ft., B&B	$2.00	$2.75
4 to 5 ft., B&B	2.50	3.50
5 to 6 ft., B&B	3.50	5.50
6 to 7 ft., B&B	5.00	6.50
7 to 8 ft., B&B	6.00	7.50
Euonymus alatus		
2 to 3 ft., B&B	1.75	...
3 to 4 ft., B&B	2.50	...
Euonymus alatus compactus		
15 to 18 ins., B&B	.85	...
18 to 24 ins., B&B	1.15	...
24 to 30 ins., B&B	1.50	...
White Pine		
2 to 3 ft., B&B	2.65	...
3 to 4 ft., B&B	3.50	...
Red Pine		
3 to 4 ft., B&B	3.50	...
4 to 5 ft., B&B	4.50	...

CHRISTMAS TREES

Scotch Pine

Cut, No. 1, 5 to 7 ft., **$2.25**
Cut, No. 2, 5 to 7 ft., **$1.00** to **$1.50**

Red Pine, cut

No. 1, 5 to 8 ft., **$1.50**
No. 2, 5 to 8 ft., **.50**

Balsam Fir, No. 1, per bundle, **$5.50**

Delivery direct to you, rates reasonable.

WADE & GATTON NURSERY

Phone: Butler 2-3191 **BELLVILLE, O.**

GINGKO - biloba

Transplanted Specimens, XXXX

	Each	Per 100
2½ to 3-in. cal., 12 to 15 ft.		$17.50
3 to 3½-in. cal., 15 to 18 ft.		22.00

Carlots only!

THE WM. A. NATORP CO.

4400 Reading Rd., **CINCINNATI 29, O.**

Visit our nurseries when in Cincinnati.

1956 **1957**

15 MILLION SEEDLINGS

of

Scotch, Austrian and Red Pine

McCURDY BROS. NURSERIES **MANTON, MICH.**

NORTHERN-GROWN STOCK

Shipment Sept. 15 to Nov. 1

3-yr. SEEDLINGS

	Per 100	Per 1000
Colorado Blue Spruce		
6 to 10 ins.	$5.00	$45.00
4 to 6 ins.	4.50	35.00
Black Hills Spruce		
6 to 8 ins.	5.00	40.00
4 to 6 ins.	4.50	35.00
Norway Spruce		
8 to 10 ins.	4.50	40.00
4 to 8 ins.	4.00	35.00
Mugho Pine (Dwarf Tyrolean Sheared)		
4 to 5 ins.	6.00	50.00
Scotch Pine, Riga		
8 to 10 ins.	4.00	35.00
6 to 8 ins.	3.50	30.00
Austrian Pine		
8 to 12 ins.	5.00	45.00
6 to 8 ins.	4.50	35.00
Ponderosa Pine		
8 to 12 ins.	3.50	30.00
Snowy Mountain Douglas Fir		
6 to 10 ins.	5.00	45.00
6 to 8 ins.	4.50	40.00
American Arborvitae		
4 to 8 ins.	4.50	35.00

4-yr. TRANSPLANTS

Norway Spruce		
12 to 15 ins.	$18.00	$150.00
10 to 12 ins.	15.00	120.00
6 to 8 ins.	10.00	80.00
Black Hills Spruce		
6 to 8 ins.	15.00	130.00
4 to 6 ins.	12.00	100.00
White Spruce		
6 to 10 ins.	12.00	100.00
Colorado Blue Spruce		
6 to 8 ins.	15.00	120.00
4 to 6 ins.	12.00	100.00
Scotch Pine, Riga		
12 to 18 ins.	18.00	150.00
Balsam Fir		
12 to 15 ins.	20.00	150.00
10 to 12 ins.	15.00	120.00
6 to 8 ins.	10.00	80.00
American Arborvitae		
12 to 15 ins.	18.00	150.00
8 to 12 ins.	15.00	120.00
Snowy Mountain Douglas Fir		
6 to 10 ins.	18.00	150.00
Ostrich Plume Ferns	8.00	....

Write for prices on 10,000 or more.

J. R. PALMER & SON
BLACKDUCK, MINN.

	Per 100
HYDRANGEA PETIOLARIS (Climbing Hydrangea)	
2½-in. pot plants	$ 40.00
EUROPEAN MT. ASH (Sorbus aucuparia)	
5 to 6 ft.	70.00
6 to 7 ft.	125.00
8 to 9 ft.	220.00
GOLDEN VICARY PRIVET	
8 to 12 ins., T.	22.00

GIRARD BROS. NURSERY
GENEVA, OHIO
Send for our price list.
Visitors welcome.

REMEMBER SHERMAN'S for . . .

Alpine Currant
Hydrangea P. G.
French Lilacs
Snowball
Shade Trees
Evergreens
Phlox
Peonies
Plum Seedlings
Lining-out Stock

Let us quote you on your requirements.

SHERMAN NURSERY CO.
CHARLES CITY, IA.

COMING EVENTS

MEETING CALENDAR

October 19 to 21, Texas Rose Festival, Tyler, Tex.

October 20 to 22, Florida Nurserymen and Growers Association, annual trade show, Lido Biltmore hotel, Sarasota, Fla.

October 21 to 23, American Horticultural Council, Inc., 11th annual congress, Kellogg Center, Michigan State University, East Lansing, Mich.

October 24 to 26, Holly Society of America, meeting, Multnomah hotel, Portland, Ore.

November 29 to December 1—Plant Propagators Society, sixth annual meeting, Wade Park Manor, Cleveland, O.

December 3 and 4, Minnesota State Nurserymen's Association, annual meeting, Lowry hotel, St. Paul, Minn.

December 3 to 5, New York State Nurserymen's Association, short course, Cornell University, Ithaca, N. Y.

December 5 to 7, Wisconsin Nurserymen's Association, annual meeting, Hotel Schroeder, Milwaukee, Wis.

December 6, Pennsylvania Nurserymen's Association, Western Region, winter meeting, Hotel Webster Hall, Pittsburgh, Pa.

December 6 and 7, Arizona Association of Nurserymen, annual convention and fifth annual short course, San Marcos hotel, Chandler, Ariz.

December 10 and 11, Nebraska Association of Nurserymen, annual meeting, Cornhusker hotel, Lincoln, Neb.

December 27, Connecticut Nurserymen's Association, annual meeting, Waverly Inn, Cheshire, Conn.

NEW JERSEY CONFERENCE

The conference of New Jersey Federation of Shade Tree Commissions will be held at the Hotel Haddon-Hall, Atlantic City, N. J., November 25 to 27, according to announcement by Herman S. Porter, program chairman. Cooperating societies are the New Jersey Society of Certified Tree Experts and the New Jersey Arborists Association. The program of the conference has been planned as follows:

NOVEMBER 25

Chairman, Carl E. Mellquist, superintendent of Union county, N. J., shade tree commission.

Debate: "Resolved That Medium and Small-Size Trees Are More Desirable for Street Planting Than Our Old Favorites." Moderator, Raymond Korbobo, associate extension specialist in ornamental horticulture, Rutgers University, New Brunswick, N. J.

NOVEMBER 26

Dr. Henry T. Skinner, director, National Arboretum, Washington, D. C., will discuss "Lesser Known Hardy Ornamental Trees: Their Dissemination, Propagation and Uses."

Richard R. Fenska, forester and tree

LINING-OUT and FINISHED STOCK
Ask for List

THE COTTAGE GARDENS
Our 32nd Year
Nick I. W. Kriek—Harold E. Hicks
LANSING 17, MICH.

ORNAMENTALS
TREES SHRUBS
EVERGREENS
Wholesale growers of a general assortment for the best landscape plantings.
BRYANT'S NURSERIES
Princeton, Illinois

QUALITY STOCK
LAKE COUNTY NURSERYMEN'S ASSN.
P. O. Box 33
MENTOR, O.
Write for Membership List

SUGAR MAPLE
NATIVE STOCK
Open field—selected or field run, up to 6 ins. F.O.B. South Bend, Ind.
Myrtle, Euonymus radicans erectus and Euonymus coloratus cuttings to gallon cans.
VAUGHAN'S NURSERY
Granger, Ind.
Phone: South Bend CE 3-3318

Stock that is hardy.
WHOLESALE
SUMMIT NURSERIES
STILLWATER, MINN.

expert, will speak on "The Correct Pruning of Trees. How, When, Why." Discussion.

Donald Snyder, research assistant, Rutgers University, will speak on Anthracnose on Plane and White Oak."

Lunch.

Panel on "Progress in Tree and Shrub Disease Control; the Best Safe Fungicides; Their Compatibilities with Insecticides."

Business meeting.

Annual banquet, with guest speaker, Philip Alampi, secretary of agriculture of New Jersey. Main speaker, Alfred Runk, naturalist, who will show a film in color on "Plants and Birds for the Winter Garden."

NOVEMBER 27

Moderator of morning session, Henry Vaughn-Eames, president, New Jersey Society of Certified Tree Experts.

Panel on "Insecticides, Their Uses, Their Compatibilities with Fungicides and Other Insecticides; Safety Factor as to Men, Plants, Animals and Fish."

Albert W. Meserve, of the Albert W. Meserve Co., United Arborists, Danbury, Conn., will speak on "How to Operate Your Tree Business at a Profit." Discussion.

Questions on tree problems, with answers by specialists from the floor. (Questions should be submitted in writing to Philip E. Alden, secretary, New Jersey

ROSE FESTIVAL SIGNS

One of the signs at Tyler, Tex., announcing the annual Texas rose festival, October 19 to 21, is admired by these 2-year-olds, Charles Bronaugh, son of Frank Bronaugh, executive secretary of the Texas rose festival, Tyler, and Mrs. Bronaugh, and Constance Colleen Mills, daughter of Hugh R. Mills, of the Carl Shamburger Nursery, Tyler, and Mrs. Joan Kilner Mills. The youngsters will get their thrills from the big parade with its clowns, prancing horses and rose-covered floats, while their elders will also enjoy the rose queen's coronation, the coronation ball, the rose show and visits to the rose fields.

TREE LIST FOR FALL AND SPRING

	Per 100	Per 1000	Per 1000 in 10,000 lots
Colorado Blue Spruce			
(3-0), 3 to 6 ins.	$ 6.00	$ 30.00	....
(3-0), 6 to 10 ins.	10.00	50.00	$47.50
(3-1), 6 to 12 ins.	16.00	80.00	....
8 to 12 ins., XX	40.00	350.00	....
12 to 18 ins., XX	75.00	....	....
Black Hills Spruce			
10 to 15 ins., XX	32.00	300.00	....
White Spruce			
(3-0), 4 to 8 ins.	10.00	42.00	40.00
Norway Spruce			
(3-0), 6 to 12 ins.	10.00	45.00	42.50
Douglas Fir			
(2-0), 3 to 6 ins.	8.00	30.00	28.00
(3-0), 4 to 8 ins.	10.00	35.00	....
4 to 6 ins., X	12.00	60.00	....
6 to 9 ins., X	15.00	110.00	....
9 to 12 ins., X	25.00	160.00	....
Mugho Pine, Tyrolean, top -sheared			
(3-0), 3 to 5 ins.	12.00	60.00	....
Mugho Pine, Swiss Mt., sheared			
(3-2), 4 to 8 ins.	25.00	160.00	....
Taxus densiformis			
6 to 9 ins., XX	70.00	....	....
Taxus cuspidata capitata, sheared			
6 to 9 ins., XX	55.00	....	....
9 to 12 ins., XX	85.00	....	....
Riga Scotch Pine			
(2-0), 2 to 3½ ins.	5.00	16.00	14.00
(2-0), 3½ to 8 ins.	8.00	28.00	26.00
(2-1), 4 to 10 ins.	12.00	55.00	....
Austrian Pine			
(2-1), 3 to 8 ins.	12.00	55.00	....
White Birch			
3 to 4 ft., XX	75.00	....	....

TERMS: Cash with order please, or 25% deposit, balance before shipment. 50 at 100 rate, 500 at 1000 rate, all seedlings sold in multiples of 50, all transplants sold in multipes of 10. Minimum order $10.00. Packing charges included in price of trees.

MATTHEWS NURSERY
HARBOR SPRINGS, MICH.
Telephones: 123, 48 or 732

MAIL-ORDER MEN:
List
BEAUTY BUSH (Kolkwitzia)!
We have transplants light enough for mailing.

	Per 100	Per 1000
12 to 18 ins.	$22.50	$200.00
18 to 24 ins.	30.00	250.00
2 to 3 ft.	35.00	300.00

NEWPORT NURSERY CO. NEWPORT, MICH.

Wholesale growers of the best
Ornamental Evergreens
Deciduous Trees
Shrubs and Roses
Write for our current trade list.
The Kallay Brothers Co.
1251 Madison Ave. PAINESVILLE, O.

Quality Ornamentals
Since 1881
Cole nursery company
2000 Jackson St. PAINESVILLE, O.

GINKGO BILOBA
(Maidenhair Tree)

	Per 100	Per 1000
4 to 6 ins., 1-yr., S...	$12.00	$110.00
6 to 8 ins., 2-yr., S...	15.00	140.00
8 to 12 ins., 2-yr., S...	20.00	190.00
12 to 15 ins., 2-yr., S...	25.00	.....

GIRARD BROS. NURSERY
GENEVA, OHIO
Send for price list.
Visitors welcome.

Pictured above left to right, top row: **Buddleia, Purple-leaved Honeysuckle Vine, Chinese Privet, Blue Hetz Juniper;** bottom row: **Forsythia Lynwood Gold, Blue Spiraea, Euonymus patens,** small-leaved, **Euonymus coloratus.**

See classified ad under lining-out stock for prices and other items.

McININCH GREENHOUSES
ST. JOSEPH, MO.

BOSLEY NURSERY
MENTOR, O.
PIONEERS IN HOLLY

QUALITY PERENNIALS

	Per Dozen	Per 100
Artemisia Silver Mound	$3.25	$22.50
Iberis Snowflake	3.60	25.00
Lythrum Morden's Gleam	3.30	22.50

BENTLEY'S HARDY PLANTS
2559 Mentor Ave. MENTOR, O.

ARMINTROUT'S EVERGREEN NURSERY
ALLEGAN, MICH.
Seedlings—Transplants
Finished Stock
Send for price list.

Federation of Shade Tree Commissions, Municipal building, Kearney, N. J., before the opening of the conference.)

Lunch.

Panel on "Improving Tree Feeding Practices." Panel leader, Wallace A. Mitcheltree, extension specialist in soils, Rutgers University. Panel members, Edgar G. Rex, chief of the bureau of plant pathology, division of plant industry, New Jersey department of agriculture, Trenton, N. J.; Homer L. Jacobs, vice-president of research and development, the Davey Tree Expert Co., Kent, O., and Richard M. Viggars, vice-president, southern Atlantic states division, the F. A. Bartlett Tree Expert Co., Wilmington, Del.

A ladies' program is being prepared for November 26 and 27; however, ladies may attend all sessions, if they wish.

PLANT PROPAGATORS' DATES

The sixth annual meeting of the Plant Propagators Society will be held at Cleveland, O., November 29 to December 1, according to William E. Snyder, secretary-treasurer. The Wade Park Manor will be headquarters for the event.

NEW YORK SHORT COURSE

The short course of the New York State Nurserymen's Association has been scheduled for December 3 to 5, at Cornell University, Ithaca, N. Y., according to the association secretary, Sidney E. Bennett.

WISCONSIN MEETING

The dates for the meeting of the Wisconsin Nurserymen's Association have been announced by Thomas S. Pinney, secretary, as December 5 to 7. Members of the association will convene at the Hotel Schroeder, Milwaukee, Wis.

LOUISIANA CONVENTION

[Continued from page 9]

ence of phosphorus and potash in the soil in adequate quantities for plant growth will increase the conversion of urea to nitrate nitrogen, the speaker stated.

The long-lasting carry-over in the soil of Ureaform nitrogen has possibilities in the fertilizer programs on container-grown and bed-grown azalea stock, Dr. Rennie concluded.

A panel at the session on advertising was also conducted September 15, with each panel member making a brief talk before answering questions from the floor.

Advertising Pointers

Jay Boudreaux, advertising manager for the Lafayette Daily Advertiser, spoke on newspaper advertis-

HARDY PLANTS
Bulbs and Shrubs
"America's Finest"
Write for Trade List
Springbrook Gardens
MENTOR, O.

COMPLETE ASSORTMENT OF
Evergreens, Fruit Trees, Shade Trees, Roses and Lining-out Stock.
Write for complete list.
ONARGA NURSERY CO.
ONARGA, ILL.

SMALL FRUIT PLANTS and VEGETABLE ROOTS
We grow for the wholesale trade only.
KRIEGER'S WHOLESALE NURSERY
BRIDGMAN, MICH.

TAXUS
is our specialty.
Bed stock—Liners
Finished—Specimen.
Send for List
EAGLE CREEK NURSERY CO., NEW AUGUSTA, IND.

WELLER'S BETTER
PERENNIALS
with that
Wonderful Root System
WELLER NURSERIES CO.
Ask for Catalog *Holland, Mich.*

VANDENBERG BULB CO.
HOLLAND and AMERICAN-GROWN BULBS
Ask for Our Price List.
NORTH RIDGEVILLE, OHIO
Phone: Elyria 72762-74531

AMERICA'S BEST SOURCE FOR
HARDY PLANTS
Write for Trade List MENTOR, OHIO
Wayside Gardens

NURSERY-GROWN SHADE TREES

Grown in rows 8 ft. apart; 2 to 4 ft. apart in the row, which gives them ample room for proper root, body and top development.

	Each	Per 10
Ash		
1¼ to 1½-in. cal.		$ 2.50
1¾ to 2-in. cal.		3.75
White Birch		
1½ to 2-in. cal., B&B		8.00
2 to 2¼-in. cal., B&B		12.50
Chinese Elm		
1¼ to 1½-in. cal.		2.00
1½ to 2-in. cal.		3.00
2 to 2½-in. cal.		3.50
Sweet Gum		
1½ to 1¾-in. cal., B&B		10.50
1¾ to 2-in. cal., B&B		12.50
Hackberry		
1¾ to 2-in. cal.		5.10
2 to 2½-in. cal.		6.50
Thornless Honey Locust		
1¼ to 1½-in. cal.		4.00
1½ to 2-in. cal.		5.25
Silver Maple		
8 to 10 ft.		1.75
1¼ to 1½-in. cal.		2.25
Sycamore		
8 to 10 ft.		3.25
1½ to 2-in. cal.		5.25
2 to 2½-in. cal.		7.50
Pin Oak		
1½ to 2-in. cal., B&B		11.00
2 to 2½-in. cal., B&B		15.00
American Linden		
6 to 8 ft.		2.50
1 to 1¼-in. cal.		3.50
1¼ to 1½-in. cal.		4.25
Tulip Tree		
6 to 8 ft., B&B		6.50
1¼ to 1½-in. cal., B&B		8.50

WANTED

10,000 Taxus in uprights and spreaders in 4 and 5-year-old liners; 5000 American Holly; 5000 each: Mugho, Austrian, Scotch and White Pine; Andorra, Hetzi Glauca; Compacta Pfitzer in transplants for lining out.

Write for special prices on quantity lots. If you haven't received our Fall Wholesale Price List, write for one.

Our nursery is located 225 miles southwest of Chicago, Ill.; 90 miles east of St. Louis, Mo.; 85 miles west of Vincennes, Ind., on State Route 37 two miles north of Farina, Ill.

EGYPTIAN NURSERY & LANDSCAPE CO.

Day Phone: 3551 Night Phone: 2641

FARINA, ILL.

EUONYMUS COLORATUS

Fine evergreen ground cover

	Per 100	Per 1000
Ground cover size	$15.00	$120.00
	Per 10	Per 100
12 to 15 ins.	$3.00	$25.00
15 to 18 ins.	4.00	35.00

Write for complete trade list.

KINGWOOD NURSERIES MENTOR, O.

RHODODENDRON

Catawbiense, Maximum, Carolinianum

Kalmia, Hemlock, White Pine
Leucothoe, White Dogwood, Balsam

Cutbacks, Seedlings, Finished Stock

Write for price list.

ANTHONY LAKE NURSERY, INC.

PINEOLA, N. C.

HOLLAND BULBS

TUBEROUS BEGONIAS, GLOXINIAS
PERENNIAL SPECIALTIES

VERONA GARDENS
Th. Grevers
Wholesale Grower
Rt. 5, BATTLE CREEK, MICH.

ing. He strongly recommended pricing articles and using leader items to attract customers to the nursery. He stated that advertising would (1) build a good reputation for the firm, (2) attract new customers, (3) help overcome competition, (4) help to move fast or slow items and (5) increase sales volume.

Tom Peers, advertising manager for radio station KVOL, Lafayette, stated that advertising programs should be planned well in advance with the local agent for the medium to be used. He urged group advertising by wholesale growers directed to retail purchasers. He stated that growers would profit directly and indirectly from such advertising if the program was planned to sell the public on the pleasures derived from trees, grass and shrubs. The homegrown angle is used to good advantage with some vegetables, why not nursery stock?, Mr. Peers continued.

The retailer needs to push his extra services more, stated the speaker. Simply listing plant names or varieties and prices will never appeal to a vast number as much as the fact that the buyer can obtain extra service, he concluded.

TV Programs

Quitman Henly, commercial manager, KLFY-TV, illustrated the methods used in advertising on television. Slides, the lowest-cost method, may be actual photograph cartoon characters, diagrams or graphs that are associated with the business.

Films, the next possibility on TV, but more costly than slides, can be used repeatedly. The nurseryman can take photographs of a planting crew in action, or a before, during and after sequence on a planting job. Mr. Henly concluded his remarks by saying that live telecasts are more difficult to make, but are always effective.

The social program was initiated Friday, September 14, with a tour of the Jefferson island salt mine by about 100 nurserymen and their wives. Friday evening, the famous Cajun shrimp boil was held in the Cow Palace and was followed by a dance.

The president's banquet and dance were held Saturday evening, at which time the new officers were presented to the group.

NEWLY built by Keiding Paper Products Co., Milwaukee, Wis., is a factory costing over $250,000, containing the most advanced equipment for the manufacture of self-airing containers for nursery stock.

EUONYMUS RADICANS ERECTUS

Broad-leaved Evergreen of many uses

- **Landscape Shrub**
- **Quality Hedge**
- **Ideal for Canning**
- **"Filler" Shrub**
- **Cash-and-carry Sales**
- **Window Box Item**

Small-leaved; broad, upright, dense growth; dwarf habit. Selected strain of the best quality.

Wide range of sizes

	Each 100 rate	Each 1000 rate
2-in. pots	$0.17	$0.15
12 to 15 ins., 3-yr., TT	.45	.40
15 to 18 ins., 3-yr., TT	.60	.55
18 to 24 ins., 4-yr., TT	.80	.75

COTONEASTER APICULATA

The heavy, dwarf, spreading cotoneaster with the largest red berry. Fast-growing but dense.

	Each 100 rate	Each 1000 rate
2-in. pot plants	$0.23	$0.20
2-yr., T.	.45	.40
3-yr., T., heavy	.60	.55

EUONYMUS ALATUS COMPACTUS

Best dwarf, deciduous euonymus. One of the most spectacular fall-coloring shrubs on anyone's list.

	Each 100 rate	Each 1000 rate
2-yr., 2-in. pots	$0.20	$0.18
4-yr., 10 to 15 ins., T.	.45	.40
5-yr., 15 to 18 ins., T.	.70	.65
5-yr., 18 to 24 ins., T.	.85	.80

Bare root only

Ready for immediate shipment. Minimum quantity: 100 pots or 50 B.R. shrubs, please.

THE BERRYHILL NURSERY CO.

P. O. Box 696 SPRINGFIELD, O.

NORTHERN-GROWN STOCK

Evergreen Liners
Bleeding Hearts
Ornamental Shrubs
Fruit Trees
French Lilacs
Philadelphus Minnesota Snowflake
(Plant Patent No. 538).

Send for list.

J. V. BAILEY NURSERIES

ST. PAUL 6, MINN.

Why your dolla; b

MN LINE

ORDER TODAY FOR IMMEDIATE SPR

Take one from its pot. You'll see a sturdy root system *fully* developed. MN pot grown liners are rarin' to grow for you—fast!

Note plant freshness and health when they arrive. Our free safety packing in rugged but light containers keeps roots and original soil mixtures intact. Shi costs lower too. These nds ena MN to ship millions ers all the world.

Finally, consider t You get varieties that sell bes w bes *your* area because M es you world's largest selecti

Fine examples of more than 1000 varieties n avai

★ ***Minimum 25 per variety*** ★ ***Prices per 100 plants*** ★ ***No king c***

	2¼-in. Pots
Albizzia julibrissin	$18.00
Althaea Pink Delight	18.00
Aucuba japonica, female variegata	25.00
Berberis julianae	20.00
Berberis mentorensis (Pat. No. 99)	20.00
Bignonia tweediana	15.00
Bougainvillea Barbara Karst	20.00
Bougainvillea Temple Fire	$20.00
Cedrus atlantica (sdlgs.)	18.00
Cedrus libani	18.00
Cotoneaster zabeli	18.00
Cydonia Minerva	20.00
Euonymus coloratus	18.00
Euonymus fortunei carrierei	18.00
Euonymus fortunei erecta	18.00
Euonymus japonicus grandifolia	15.00
Euonymus Radicans, Upright	18.00
Forsythia Lynwood Gold	18.00

MONROVIA NURSERY

P.O. BOX Q, AZUSA, CALIFORNI

as buy more in
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E OSPRING DELIVERY!

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ese nds enable
lions ers all over

ider t You get the
ell be ow best, in
use M es you the
selecti

es n available
★ No king charges

FULLY DEVELOPED ROOTS

FREE PACKING SAFE SHIPPING

	2¼-in. Pots
...era helix	$15.00
...crenata convexa ...lata	18.00
...ppaca East Palatka	20.00
...reuteria paniculata	18.00
...onia bealei	20.00
...lina domestica	15.00
...sylvestris regensis	15.00
...cantha coccinea ...ratti	18.00
...cantha Rosedale ...M. Reg.)	18.00
...Oakington Ruby	20.00
...sia gigantea	25.00

WORLD'S LARGEST SELECTION

	2¼-in. Pots
Thuja orientalis bakeri	$18.00
Thuja orientalis, Blue Cone	18.00
Thuja orientalis pyramidalis	18.00
Viburnum burkwoodi	20.00
Viburnum mariesi	20.00
Viburnum opulus sterile	18.00
Viburnum rhytidophyllum	18.00
Zelkova serrata	20.00

SPECIAL!

Pittosporum tobira variegata

Hardy, vigorous evergreen shrub. Excellent for dish gardens, home landscaping or for growing on. In 2¼-in. pots. Free packing. Regular price $18.00 per 100.

NOW, ONLY $15.00 PER 100.

Price effective October only.

ORDER NOW!

...SRY Co.
...NIA

NEW 1956-57 CATALOG... Over 1000 varieties described. Many photos. Write today on your letterhead.

PLANT NOTES HERE AND THERE

By C. W. Wood

Eryngium

The increased use of eryngiums in gardens is heartening to me as an observer of the garden scene, perhaps because I have been singing their praises for 40 years. Increased interest in the umbellifers has no doubt come about in no small measure by the introduction of the new blue hybrids, such as Taplow Blue, and the prominence they have been given in present-day plant catalogs. However, one should not stop with the new hybrids, for the species hold much good material. Not only are they splendid garden ornaments, but their striking stems in blue, silver and pinkish shades are useful for cutting and may be dried for winter bouquets.

After one has tried to grow them in quantity, their absence from many plant lists will be better understood, for they do not readily lend themselves to the mass production methods so dear to the American heart. Seeds germinate slowly and uncertainly unless fresh seeds are planted outdoors in fall or unless another schedule allowing freezing of the seeds is followed. The plants will not withstand disturbance after they are once established. And, for the same reason, they are not to be divided with any degree of satisfaction. If they are to be sold, rather than grown for the production of cut decorative material, the plants, either seedlings or those grown from root cuttings (the only way to reproduce the named varieties), may be grown along in pots. They all need deep soil, preferably, with few exceptions, and soil on the lean side.

I had not meant to say anything about the species until I remembered Farrer's enthusiasm for the group and went to him for the following: "This is the only, the unsurpassable E. alpinum, a plant of the midalpine limestones, scattered here and there along the mountain chains, nowhere in any great quantity, though common enough in the small limited stations where it occurs. But in nature, accordingly, it is a prize of such preciousness that it should neither be dug nor picked—even if its root did not forbid the one crime, and the hope of seed did not dehort from the other. It is indeed a superb and uncanny splendor of some foot or 18 inches high, blooming through the late fullness of summer, and, like all its kind, perfectly happy in the rock garden in any very deep loam. No other can compete with this, except its peer, E. giganteum, of nearly a yard high, from the Caucasus, with much the same frill, but here of an ivory-white so ghostly-clear that the plant is called Elve's Bones."

Geums

A New York reader writes as follows: "There is a renewed interest in rock gardening in this area, fostered by a small local unit of a rock garden society or round robin. I think that I should, as a consequence, widen my list of plants for that purpose. And among other things I saw a planting of small geums in a private garden recently that excited my curiosity about that group of plants. Could you give us a little information about them?"

The taller kinds, like Mrs. Bradshaw, Lady Stratheden, Fire Opal and Princess Juliana, all forms of Geum chiloense, a native of Chile and consequently a little too tender for severe climates, are too tall for all except the largest rock gardens. However, there are a number of smaller kinds, mostly hardy, that could well be included in rock garden material, requiring little more than a well-drained soil in sun or light shade, with some attention to

SAVE 1/3 to 1/2

On Concord Grape Plants

2-Year No. 1 Plants

Will Take Dwarf Apple Trees in Trade

We have a fine block of 2-year No. 1 Concord Grape plants that must be moved to make room for new plantings. These are being offered at a much reduced price for immediate sale. Write today for special quotations on the quantities you can use. Will accept Dwarf Apple Trees in exchange for the Grape plants.

WHOLESALE DEPARTMENT **STAHELIN'S NURSERIES**

BRIDGMAN, MICH.

Also Headquarters for
Original Strain PAYMASTER Strawberry Plants

GOLDEN VICARY PRIVET

Lovely, solid, golden-leaved variety. Extremely adaptable for a striking border. Retains full golden color from spring to fall. Beautiful for rose bed borders. Should have full sun.

	Per 100	Per 1000
Outdoor frame rooted cuttings ...	$10.00	$80.00

BEARDSLEE NURSERY Perry, O.

EVERGREENS

Growers of Quality Evergreens
Lining-out Stock a Specialty
Write for Trade List

EVERGREEN NURSERY CO.
Established 1864 : STURGEON BAY, WIS.

Mention The American Nurseryman when you write.

BESTURF BRAND MEYER Z-52 ZOYSIA Round Grass Plugs
"The World's Finest Lawn Grass"
grown and sold by
PLEASANT VIEW NURSERIES
(Turf Division)
Peters Road, Troy, Ohio, Phone 27094

Over 100 Years' Nursery Experience
ILGENFRITZ NURSERIES, Inc.
The Monroe Nursery
MONROE, MICHIGAN
GET THE BEST BUY ILGENFRITZ

Hardy Northern-Grown Stock
at WHOLESALE
JEWELL NURSERIES, Inc.
Write for Price List. Box 457, LAKE CITY, MINN.

their moisture needs in dry weather. Of these, the following are to be recommended:

Geum borisi, in rather poor soil, sent up 6 to 8-inch flowering stems above its evergreen carpet, crowned with a bright yellow flower. In my trials years ago, it grew to a foot or 15 inches in height when given a rich soil and was then rather coarse. The seemingly apparent differences between Bailey's and Farrer's treatment of this plant might evaporate into nothingness if pursued to the end. The former calls it a hybrid between G. reptans and G. bulgaricum, while Farrer implies that it is a species from Bulgaria. Regardless of origin, it can be a lovely little ornament if not treated too liberally. The G. bulgaricum mentioned in the foregoing is really for borders, growing to two feet in height, with more foliage than flowers, which are yellow. The origin of G. heldreichi is also in doubt, some calling it a hybrid and others saying it is no more than a form of G. montanum. All that I can say is that it is a charming plant, with orange-red flowers at the top of 8-inch stems, easy to grow under ordinary geum treatment.

And that leads us to the most precious of all geums from the rock gardener's standpoint — G. montanum. It makes restrained mats of pretty, little, puckered green leaves, over which in spring shine big, golden-yellow suns on 3-inch stems. It is said to be quite stemless in its European alpine home and must then be a charmer indeed. Nor does its beauty end with the blooming period, for later its heads of rose-colored seeds add a pretty note to the rock garden scene. Incidentally the G. pyrenaicum which one sometimes sees advertised is little more than a large G. montanum, getting to eight or 10 inches tall. Much has been written on G. reptans, some of it being based on false materials, as when I wrote in an amateur magazine in 1929 that it was "quite easy in a well-drained spot in full sun." After

150,000
DWARF APPLE TREES
All sizes on No. 9.

30,000
CUT-LEAVED WEEPING BIRCH
(Betula alba laciniata)
All sizes up to 10 feet.

Write for Prices

Special quotations for large orders.

BROOKDALE-KINGSWAY, LTD.
BOWMANVILLE, ONT., CANADA

SPECIAL
Dwarf Fruit Trees
Special list of nursery stock.
Send your request to:
THE C. D. MORRIS NURSERY LTD.
Box 5, OCEAN PARK, B. C., CANADA

HEMEROCALLIS
Day Lilies

	Per 10	Per 100
August Pioneer	$2.50	$20.00
Hyperion	3.00	25.00
Theron	2.50	20.00
Rajah	2.50	20.00

BEARDSLEE NURSERY Perry, O.

SHADE AND NUT TREES

	Each	Per 10
Beech, American,		
2 to 2½-in. cal., B&B.	$32.50	$300.00
2½ to 3-in. cal., B&B.	40.00	375.00
Birch, European White,		
5 to 6 ft.	2.00	17.50
6 to 8 ft.	2.75	25.00
8 to 10 ft.	3.75	35.00
10 to 12 ft.	4.75	45.00
Birch, Cut-leaved Weeping,		
8 to 10 ft.	4.25	40.00
10 to 12 ft.	5.50	52.50
Cherry, Flowering Kwanzan,		
6 to 7 ft.	4.50	42.50
Elm, American, 5 to 6 ft.	1.75	15.00
6 to 8 ft.	2.25	20.00
8 to 10 ft.	3.00	27.50
1¼ to 1½-in. cal.	4.00	37.50
1½ to 2-in. cal.	5.50	50.00
Elm, Chinese, 5 to 6 ft.	1.25	10.00
6 to 8 ft.	1.75	15.00
8 to 10 ft.	2.25	20.00
1¼ to 1½-in. cal.	3.50	32.50
1½ to 2-in. cal.	4.50	42.50
2 to 2½-in. cal.	7.50	65.00
Hawthorn, Washington,		
5 to 6 ft. NB.	3.75	....
Hawthorn, Paul's Scarlet,		
5 to 6 ft. NB.	4.25	....
Linden, American,		
6 to 8 ft.	2.50	22.50
8 to 10 ft.	3.25	30.00
10 to 12 ft.	4.50	42.50
2 to 2½-in. cal.	7.50	72.50
Locust, Honey, Thornless,		
6 to 8 ft.	2.50	22.50
8 to 10 ft.	3.25	30.00
Maple, Norway, 8 to 10 ft.	4.25	40.00
1¼ to 1½-in. cal.	6.00	57.50
Maple, Schwedler's,		
6 to 8 ft.	4.00	37.50
8 to 10 ft.	4.75	45.00
1¼ to 1½-in. cal.	6.50	62.50
Maple, Silver, 8 to 10 ft.	2.75	25.00
1¼ to 1½-in. cal.	3.75	35.00
1½ to 2-in. cal.	6.00	51.00
2 to 2½-in. cal.	8.00	70.00
Poplar, Lombardy,		
5 to 6 ft.	...	5.00
6 to 8 ft.	...	6.50
8 to 10 ft.	...	8.50

NOTE: Send us your want list for quotations on larger quantities and other varieties of shade trees.

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Chinese Chestnut,		
2 to 3 ft., T.	$ 6.50	$ 55.00
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4 to 5 ft., T.	14.00	130.00
5 to 7 ft., T.	20.00	185.00
Filbert, American,		
2 to 3 ft.	5.00	45.00
3 to 4 ft.	7.50	70.00
4 to 5 ft.	9.00	85.00

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12 to 18 ins.	3 to 4 ft.
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24 to 30 ins.	5 to 6 ft.
30 to 36 ins.	

WHITE DOGWOOD

4 to 5 ft.	6 to 7 ft.
5 to 6 ft.	7 to 8 ft.

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3500 Unnamed berried types.

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Good, well-filled plants, reasonably priced.

	Each
15 to 18 ins., B&B	$1.60
18 to 24 ins., B&B	1.90

Also **Juniperus hetzi** in various sizes and other evergreens.

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Azaleas, Camellias and Magnolias our specialties.

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AAN

I got seeds of the true plant from Austria just before Hitler took over the country, I found that I had been working with an interloper, probably a hybrid, and when the true one bloomed, with golden suns twice as large as G. montanum, I found out why it is called the glory of the race. But it is far from easy to grow in lowland gardens and certainly is not long-lived here in northern Michigan. Until more is known about its culture in the eastern American climate, I think that commercial growers are well advised when they are told to leave it out of their schedule. Propagation for plant sales is probably best from divisions in early spring, say in early April, though it may be done in late summer (August or early September) if small plants are wanted for the following spring.

Penstemon Saxosorum

When I read recently in Bulletin 14 of the American Penstemon Society that Penstemon saxosorum was probably not in cultivation, the name struck a familiar chord in my memory, and I went immediately to my notes and found this one for July 15, 1929: "The usual complaint heard about the beardtongues is that they are short-lived in gardens. Often this is true (unfortunately, more often than not), but P. saxosorum is, I believe from its behavior so far in our trials, an exception to the rule. It makes neat, little clumps of foliage, which send aloft slender stems to a height of 10 inches or so, with bluish-purple flowers, large for such a slender, graceful stem. It, like so many of its kind, wants light soil in full sun."

And then I read in the bulletin that it "has stems about two feet high, with narrow leaves in a dense clump and on the stem, and with rather small, deep blue flowers in a short spike. It sounds like a promising species, but is probably not in cultivation. It is common in the Rocky mountains from the Tetons to central Colorado."

It is unfortunate that I did not retain a herbarium specimen of the plant so I could check on its description; however, I do rely upon D. M. Andrews' knowledge of the genus, and he assured me at the time that my plants were true P. saxosorum. It is also unfortunate that my notes do not reveal how long the plant lasted under cultivation in northern Michigan, but I am quite sure that it could be kept going almost indefinitely by dividing the plants about every second year, as is the case with most of the glaber clan,

LINERS
FROM OPEN BEDS AND FIELD ROWS

All of our cuttings are rooted in soil. As soon as they root, they usually begin to make some new growth—often a great deal—and always begin to develop a hard, secondary root system. After a few months many are about equal to light bed-grown liners, although we continue to call them rooted cuttings.

So that you can judge what we are offering, we give the month in which the cuttings were rooted. That is, "RC June 55" would mean cuttings rooted during June, 1955, which have been growing in the soil in which they were rooted ever since. The amount of growth and the development of the root system will be in proportion to the time that has elapsed since they were rooted.

All plants go through our normally severe winters outside, so you can depend on receiving thoroughly hardened and dormant liners. However, spring does come early here. Some varieties will show activity by March 10 and nearly all begin some growth by the first of April, so please order early.

BG—bed-grown RC—rooted cutting
F—field-grown Mo., Yr.—date rooted
T—transplanted S—seedling

Berberis julianae—RC, July 56, **8c**; BG, T, 4 to 6 ins., **20c**.
Berberis julianae nana—Compact type, often called "BPI", RC, Aug. 56, **10c**; BG, T, 4 to 6 ins., **22c**.
Berberis mentorensis—RC, July 56, **7c**.
Berberis thunbergi, thornless—RC, April 56, **8c**; BG, T, 6 to 9 ins., **15c**.
CHAENOMELES (Flowering Quince) All on own root from softwood cuttings. No suckering from these:

Nivalis—The best of the white-flowering quinces. Large, pure white flowers borne in profusion. Good clean grower, vigorous and upright with few, if any, thorns and no fruit.—RC, June 56, **10c**; BG, liners, 6 to 12 ins., **18c**; 12 to 18 ins., **24c**; 18 to 24 ins., **30c**; 2 to 3 ft., **50c**.

Juliet—Light pink flowers.
Texas Scarlet—Bright red flowers, compact, low plant. The best for container growing because it blooms profusely over a long period.
Margaret Adams—Coral-pink, the best of its color.
Blood Red—Bright red flowers in big clusters.
Pink Lady—Deep pink flowers.
Ruby Glow—Very deep and rich red with golden stamens.
Early Apple Blossom—Light clear pink.
Mt. Everest—White with just a touch of lavender and rose. Very vigorous and upright.

Any of the above—RC, **10c**; BG, liners, 6 to 12 ins., **20c**; 12 to 18 ins., **30c**; 18 to 24 ins., **45c**; 2 to 3 ft., **70c**.

Japonica alpina—Genuine, from cuttings. Very showy, low shrub of very long blooming period. Quite scarce—RC, **15c**; BG, liners, 6 to 12 ins., **30c**; 12 to 18 ins., **50c**; 18 to 24 ins., **75c**.

These are the best, so far, of the more than 55 named varieties we have on test. Should be shipped before March 1. Simply heel in until planting time. Will keep perfectly. The RC size should be potted or bedded.

Cherry Laurel—See **Prunus**.
Cotoneaster apiculata—T, F, well-branched, 9 to 12 ins., **25c**; 12 to 18 ins., **35c**.
Cotoneaster horizontalis—T, F, well-branched, 9 to 12 ins., **25c**; 12 to 15 ins., **35c**.
Both cotoneasters grow beautifully in containers.
Cydonia—See **Chaenomeles**.

Euonymus alatus compactus—RC, June 56, large, **8c**.

Euonymus patens (kiautschovicus)—Large-leaved, T, F, 9 to 12 ins., liners, **15c**; 12 to 15 ins., branched, **25c**.
Euonymus patens (kiautschovicus)—Small-leaved, usually called "carrierei" in the south, "radicans erecta" in the north, RC, Aug. 56, **6c**; T, F, 12 to 15 ins., branched, liners, **15c**; 12 to 15 ins., bushy, **25c**.
Euonymus fortunei carrierei—This is the true carrierei. An evergreen climber with random variegation and orange fruit. A beautiful plant. BG, T, 8 to 12 ins., **25c**.

Foremost in intermittent mist propagation. Originator of the Electronic Leaf Control.

Euonymus fortunei minimus (kewensis)—A dainty evergreen climber with tiny leaves, charming, RC, Aug. 56, **10c**.
Ilex cornuta burfordi—RC, June 56, heavy, 6 to 12 leaves, **8c**.
Ilex cornuta femina—RC, June 56, heavy, 6 to 12 leaves, **8c**.
Ilex crenata convexa (bullata)—RC, July 56, **7c**.
Ilex crenata hetzi—RC, July 56, **8c**.
Ilex rotundifolia—RC, July 56, extra-large, **7c**.
Ilex opaca (American Holly)—Northern types—No southern hybrids. Guaranteed female and guaranteed male from cuttings, BG, liners, mostly single stem, some lightly branched, 4 to 6 ins., **17½c**; 6 to 10 ins., **25c**; 10 to 15 ins., **35c**; for canning in gallon cans, 15 to 30 ins., **50c**.

American Holly Hedge—Beautiful and unusual. Shears perfectly to any size. All male plants from cuttings. Male because of uniform better color and bypassers won't break it up for decorations. 3-yr. transplants, BR., branched, 18 to 36 ins., **80c**.

Ilex vomitoria—Guaranteed female, selected strain. RC, Mar. 56, **10c**; BG, 4 to 6 ins., **15c**; 6 to 9 ins., **20c**; 9 to 12 ins., **30c**.
Jasminum floridum—BG, 8 to 12 ins., **10c**; T, F, 12 to 18 ins., **20c**.
Jasminum nudiflorum—BG, 8 to 12 ins., **10c**.
JUNIPERUS—All rooted cuttings of junipers are a year old from short greenhouse-type cuttings. Grown in soil in full sun and sheared 3 to 5 times to produce a stubby 6 to 7-in. plant of real character, yet still small enough to be established in a 2½ or 3-in. pot.
Juniperus Andorra—RC, Nov. 55, **9c** each, **$85.00** per 1000.
Juniperus hetzi—RC, Nov. 55, **9c** each, **$85.00** per 1000.
Juniperus pfitzeriana, green—RC, Nov. 55, **10c** each, **$95.00** per 1000.
Juniperus pfitzeriana, blue—RC, Nov. 55, **12c** each, **$115.00** per 1000.
We also transplant the rooted cuttings to the open field where they are grown another full year and trimmed at least twice to produce a full, shapely plant with no suggestion of legginess. Perfect for quick establishment in containers or wrapping for mail order.
Juniperus Andorra—T, F, 6 to 9 ins., **18c**; 9 to 12 ins., **25c**; 12 to 15 ins., **35c**.
Juniperus hetzi—T, F, 9 to 12 ins., **25c**; 12 to 15 ins., **35c**.
Juniperus hibernica fastigiata—T, F, 9 to 12 ins., **20c**; 12 to 15 ins., **30c**.
Juniperus pfitzeriana, green—T, F, 4 to 6 ins., **18c**; 6 to 9 ins., **24c**; 9 to 12 ins., **30c**; 12 to 15 ins., **40c**.
Juniperus pfitzeriana, blue—T, F, 6 to 9 ins., **25c**; 9 to 12 ins., **35c**; 12 to 15 ins., **45c**.
Laurocerasus—See **Prunus**.

Mahonia bealei—1-yr., seedlings, just right for potting, **6c**; 2-yr., BG, T, 4 to 6 ins., **12c**; 6 to 9 ins., **18c**; 9 to 12 ins., **25c**.

Prunus laurocerasus schipkaensis (Laurel Cherry)—RC, July 56, **10c**; BG, 6 to 9 ins., **20c**; T, F, 8 to 12 ins., **30c**.
Prunus laurocerasus zabeliana (Laurel Cherry)—RC, July 56, **10c**; BG, 6 to 9 ins., **20c**; T, F, 8 to 12 ins., **30c**.
VIBURNUMS—All are on their own roots from softwood cuttings. The field transplants are pinched back several times a year to make well-branched plants.

All transplant readily with complete success if dormant. They should be shipped by the first part of March and will keep perfectly if heeled in until planting time (the earlier the better).

Viburnum burkwoodi—RC, June 56, **10c**; T, F, 9 to 12 ins., **25c**; 12 to 15 ins., **40c**.
Viburnum carlesi—RC, June 56, **15c**; T, F, 6 to 9 ins., **35c**; 9 to 12 ins., **55c**; 12 to 15 ins., **75c**.

Viburnum chenaulti—More shapely and attractive than burkwoodi, nearly evergreen, should soon supplant burkwoodi—RC, June 56, **12c**; T, F, branched, 9 to 12 ins., **35c**; 12 to 15 ins., **50c**.
Viburnum juddi—Better than carlesi. A more compact plant with more attractive leaves, not subject to leaf spot.—RC, June 56, **15c**; T, F, branched, 6 to 9 ins., **35c**; 9 to 12 ins., **55c**; 12 to 15 ins., **75c**.

Viburnum rhytidophyllum—(Leather-leaved Viburnum), RC, June 56, **10c**; BG, 6 to 9 ins., **17½c**; T, F, not all branched, 9 to 12 ins., **25c**; 12 to 18 ins., **35c**.
Viburnum rhytidophylloides—Hybrid between V. rhytidophyllum and V. lantana. Much like rhytidophyllum but is hardier—RC, July 56, **15c**.
Viburnum tomentosum mariesi—A much-improved form of V. tomentosum.—RC, July 56, **15c**.
Weigela vanicekі—BG, single cane, 18 to 30 ins., **17½c**; 1-yr., T, F, 2 to 3 ft., 1 and 2 canes, **25c**; 3 canes and up, **45c**.
Also many other unusual plants. Write for complete list.

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to which it evidently belongs. This personal record is set down here as a part of the penstemon record and to remind growers that penstemon holds much for them.

Aster Rotundifolius

There are a number of blue daisies native of south Africa, known variously as agathaea, felicia, aster and otherwise, which have interested me for years, but I can make nothing out of them so far as names go, and the available literature helps little. The matter was brought to my mind by the recent arrival of a letter asking about Aster rotundifolius, which the inquirer had received in seeds from Europe.

So far as I have been able to ascertain, it is a true aster, perhaps a close relative of the little annual which we used to know as Aster bergerianus. It, too, is an annual, according to behavior in northern Michigan, flowering from June until frost from a March sowing under glass in my trials. I liked it best in a 5-inch pot, where it made late fall and early winter more glorious. I

SURPLUS STOCK

	Per 100	Per 1000
Abelia grandiflora (Glossy Abelia), field-grown		
1-yr., 6 to 12 ins., C.	$ 5.00	$ 40.00
1-yr., 12 to 18 ins., C.	6.00	50.00
2-yr., 12 to 18 ins., br.	11.00	100.00
3-yr., 18 to 24 ins., well-br.	20.00	175.00
3-yr., 2 to 3 ft., well-br.	35.00	....
(Add 50c per plant for B&B)		
Hydrangea paniculata grandiflora (Peegee Hydrangea)		
1-yr., 6 to 12 ins., C.	5.00	40.00
1-yr., 12 to 18 ins., C.	7.00	60.00
2-yr., 12 to 18 ins., br.	8.50	75.00
3-yr., 18 to 24 ins., well-br.	11.00	100.00
3-yr., 2 to 3 ft., well-br.	20.00	....
Spiraea vanhouttei (Van Houtte Spiraea)		
1-yr., 6 to 12 ins., C.	3.00	20.00
1-yr., 12 to 18 ins., C.	4.00	30.00
2-yr., 12 to 18 ins., br.	5.00	40.00
2-yr., 18 to 24 ins., well-br.	6.00	50.00
3-yr., 2 to 3 ft., well-br.	20.00	....
Hydrangea quercifolia (Oakleaf Hydrangea)	Per 10	Per 100
12 to 15 ins., T., 3 canes and up	$ 3.00	$ 25.00
15 to 18 ins., T., 3 canes and up	4.00	35.00
18 to 24 ins., T., 4 canes and up	6.00	50.00
24 to 30 ins., T., 4 canes and up	7.50	65.00
Cornus florida (White-flowering Dogwood)		
3-yr., 2 to 3 ft., br.	5.00	40.00
3-yr., 3 to 4 ft., br.	8.50	75.00
4-yr., 4 to 5 ft., br.	11.00	100.00
4-yr., 5 to 6 ft., br.	15.00	125.00
(Add 50c per plant for B&B)		

NATIVE EVERGREENS

Rhododendron maximum, Kalmia latifolia, Ilex opaca, Tsuga canadensis

	Per 100	Per 1000
3 to 6 ins., S.	$3.00	$20.00
6 to 9 ins., S.	4.00	30.00
9 to 12 ins., S.	6.00	50.00
12 to 18 ins., S.	8.00	70.00

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suspect that it would be of small account as a winter bloomer in this section of sunless days, for the heavenly blue daisies with yellow hearts droop in cloudy weather. The correspondent's report that he had poor germination from a large packet of seeds corroborates my conclusion that seeds of these composites that are produced in the moist, cool climate of England, where they are generally grown, do not have an opportunity to ripen fully. If you sell plants locally, I believe, you would be well repaid by investigating these south African blue daisies.

Acantholimon

It has been on my mind for a long time to recount some of my experiences with the prickly thrifts, but I have refrained because they are so seldom available even in seeds. But of late years seeds of at least two kinds, Acantholimon glumaceum and A. venustum, are often noted in European lists; so it may be safe to mention these two. But I should caution that their propagation is only to be undertaken by the careful and the patient.

Why a plumbago cousin should be so erratic in germination is not easy to explain, but that remains true so far as my experience goes. The seeds should be fresh, to start with, and even then one cannot be sure of results. It can be said, though, that germination is apt to take place over a long period; so the seeds should be planted thinly to enable the quick risers to be pricked out without disturbing the tardy ones. We had best results from sowing indoors in late winter or early spring. The soil should be light, some gravel being an advantage, I believe, and decidedly on the limy side. Lime, in fact, seems to be a need of the plants from beginning to end, as will become apparent when you see the limy scales on the leaves of many kinds. They may also be grown from cuttings and layers, it is said, though I cannot verify that fact from experience. It is rather a long story and need not be given at this time, for I fear that few in this country are ready for the details. However, if anyone is in need of the information, I shall be glad to give by letter the little that I have accumulated on the subject.

It might be that Noah, when he came down the slopes of Mount Ararat, brushed his sandaled feet against the prickly mounds of Acantholimon glumaceum. At any rate, that is where it is found and from there on eastward into eastern

EXTENSIVE GROWERS OF . . .

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Armenia. On those hot, arid slopes, it is said to spread out a spiny clump of green leaves, which support sprays of pretty pink flowers on 6-inch stems all summer long. It is the most indestructible of the kinds I grew, though it cannot compare in beauty with A. venustum, a plant found locally in Cilicia, I believe. The latter was impermanent in my trials; so I cannot dwell upon it as I should like. Consequently, I draw upon Preece's experience in his British Columbian garden: "Every day of the year, yes, and moonlight night, too, it is an object of beauty in the rock garden; any season its beauty is enhanced, from the time you plant it till long after you are gone and others tend the garden in your stead. As the years roll by, the little gray, silver-studded rosette you bought in a thumb pot becomes a magnificent dense, spiny cushion, glaucous and glistening, glorified in summer by myriads of clear rose-pink blooms, carried aloft in arching sprays on wiry russet stems." I might add that the happy event of flowering covers a long period in summer, with large (for the genus) flowers on stems to eight inches or so in length.

Lewisia Howelli

And, finally, let me clear up an inquiry on Lewisia howelli, which came from a Massachusetts reader, with a request that I comment on the statement which he read in an amateur garden magazine: "Lewisias are not at all difficult to grow in the east."

So far as keeping the plants alive is concerned, I think I should agree with the statement; to make them bloom profusely, as one sees them in photographs, is another matter. There are a few exceptions, as the difficult and uncertain L. pygmaea, but the one inquired about, L. howelli, and its near relatives, L. cotyledon, L. finchi and L. purdyi (incidentally, these are now called oreobroma by botanists), are easily satisfied in the east and midwest if given a well-drained soil, plenty of moisture during spring until after flowering time and some shade during the hottest part of the day or, if the climate is really hot, some shade all day long. Again, where the springs have freezing nights and mornings after the snow is gone or where a snow covering is not assured throughout the winter, some provision must be made, such as a covering of evergreen boughs, to prevent sunburn.

The species specifically mentioned makes a pretty rosette of evergreen, succulent leaves, somewhat ruffled at the edges, from which spring

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Abelia grandifolia (stocky), B&B, 30 to 36 ins., **$2.75**

AZALEA—sizes up to 15 to 18 ins., few 18 to 24 ins.
Firefly—Hinodegiri—Lady Lilac
ledifolia alba—poukhanensis

Barberry, julianae
15 to 18 ins., **$1.75** 18 to 24 ins., **$2.25** 24 to 30 ins., **$3.00**

Buxus sempervirens—100 or more less 10%.
Less 10c per plant not burlapped.
10 to 12 ins., **$1.00** 12 to 15 ins., **$1.50**

Cornus florida—sizes up to 6 to 8 ft.

Cornus florida rubra—sizes up to 5 to 6 ft.

Ilex convexa—50 or more less 10%.
12 to 15 ins., **$2.00** 15 to 18 ins., **$2.50** 18 to 21 ins., **$3.30**

Ilex rotundifolia
15 to 18 ins., **$2.50** 18 to 24 ins., **$3.00** 24 to 30 ins., **$5.50**

Ligustrum Lucidum
15 to 18 ins., **$1.50** 18 to 24 ins., **$1.75**

Magnolia grandiflora
1-gal can, **$1.50** 2 to 3 ft., **$3.50** 3 to 4 ft., **$5.00** 4 to 5 ft., **$7.50**

Magnolia soulangeana—50 or more less 10%.
2 to 3 ft., B&B, **$3.00** 3 to 4 ft., B&B, **$4.00**

Magnolia stellata
2 to 3 ft., B&B, **$5.00** 3 to 4 ft., B&B, **$7.50**

MALUS—Almey, eleyi, floribunda, Hopa, parkmani—sizes up to 5 to 6 ft., B.R. and B&B.

Pyracantha lalandi (all plants staked)
1-gal. can, 18 to 24 ins., **$1.25** 2-gal. can, 2 to 3 ft., **$2.50**
2-gal. can, 3 to 4 ft., **$3.00** 2-gal. can, 4 to 5 ft., **$3.75**

Pyracantha serrata (Red Berries), staked (Bushy)
1-gal. can, **$1.25** 3-gal. can, **$3.30**

A beautiful lot of arborvitae.

SHADE TREES

Prices Bare-Root — 50 or more, one kind, one size, less 10%.

	5 to 6 ft.	6 to 8 ft.	8 to 10 ft.	10 to 12 ft.
Acer rubrum (Scarlet Maple)	**$2.00**	**$2.75**	**$4.00**	**$6.00**
Acer saccharum (Sugar Maple)	**2.00**	**3.25**	**4.50**	**8.25**
Gleditsia triacanthos inermis (Thornless Honey Locust)	**2.00**	**3.00**	**4.50**	**7.50**
Platanus occidentalis (American Plane Tree)	**1.50**	**2.00**	**3.50**	**5.00**
Quercus phellos (Willow Oak)	**2.25**	**3.50**	**5.50**	...
Ulmus americana (American Elm)	**1.50**	**2.00**	**3.00**	**4.50**

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6 to 7 ft.	$3.00	$250.00
5 to 6 ft.	2.50	225.00
4 to 5 ft.	2.00	175.00
3 to 4 ft.	1.50	125.00
2 to 3 ft.	1.25	100.00
18 to 24 ins.	1.00	75.00
White Dogwood, 2-yr., T.		
7 to 8 ft.	2.00	175.00
6 to 7 ft.	1.75	150.00
5 to 6 ft.	1.50	125.00
4 to 5 ft.	1.25	100.00
3 to 4 ft.	1.00	75.00
2 to 3 ft.	.50	40.00
	Per 100	Per 1000
Spiraea vanhouttei, 2-yr., T.		
3 to 4 ft.	$15.00	$125.00
2 to 3 ft.	12.00	100.00
18 to 24 ins.	10.00	75.00
Forsythia fortunei, 2-yr., T., heavy		
4 ft. and up	20.00	....
3 ft. and up	15.00	....
2 ft. and up	10.00	....
Weigela hendersoni, 2-yr., T., heavy, well-caned		
3 to 4 ft.	20.00	....
2 to 3 ft.	15.00	....
18 to 24 ins.	10.00	....
Weeping Willow, 1-yr., cutting-grown		
6 to 7 ft.	25.00	....
5 to 6 ft.	20.00	....
4 to 5 ft.	15.00	....
3 to 4 ft.	10.00	....
Althaea, seedling, 1-yr., T.		
3 to 4 ft.	15.00	....
2 to 3 ft.	10.00	....
18 to 24 ins.	8.00	....
Althaea, cutting-grown, double, red		
24 to 30 ins., well-br.	10.00	....
18 to 24 ins., well-br.	8.00	....
Mock Orange, Philadelphia		
Deutzia Pride of Rochester		
Forsythia		
Spiraea vanhouttei		
Bush Honeysuckle		
Weigela Cutting-grown stock, 1-yr., all 12 to 30 ins.		30.00
Kerria japonica, golden, 1-yr.		
2 to 3 ft.	30.00	....
18 to 24 ins.	20.00	....

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several stems to eight inches tall, bearing cymes of pink flowers, usually with darker lines. A well-flowered plant is truly a lovely sight and is worth the effort to produce it.

Propagation is best from seeds sown as soon as ripe or, if that is not possible, in midwinter under glass. They grow slowly while young and need care and patience, There is a rather complicated process of handling lewisia seeds that has been worked out by experienced growers —too long for the present space, but I shall try to include it in a future issue.

GARDENS IN SHADE

[Continued from page 13]

hybrid azaleas. The glossy abelia could be kept below eye level as a shade plant and is almost a full-fledged evergreen.

The narrow-leaved plants do not offer many genera, but there are many varieties and forms of yew, as well as the Curtis Spreading hemlock.

Among the deciduous shrubs there are several to choose from—jetbead; low forms of blueberry; coralberry; staggerbrush (Lyonia mariana); Aarmsbeard St. John's-wort, which is more of a subshrub, and yellowroot (Xanthorhiza simplicissima), the last of which will grow in the deepest of shade.

Large Shrubs

Of the larger shrubs that approach heights of six to 10 or more feet there is a large selection to choose from. The native flame, pinxterbloom, pinkshell and swamp azaleas are quite well suited, as are summersweet and its pink variety, fragrant sumac, chokeberries, coral and red osier dogwoods, Chinese redbud, high-bush blueberry and the following viburnums: Mapleleaf, arrowwood, nannyberry and withe-rod. Among the broad-leaved evergreens, there are many hollies; Japanese andromeda; mountain laurel; maximum, catawba and carolina rhododendrons; willow-leaved cotoneaster, which is better in lighter shade; northern bayberry, that is almost under shaded conditions, and cherry laurel.

Such large types as witch hazels, spicebush, large fothergilla and Juneberry also seem at home in a woodland setting.

The four main evergreen ground covers—myrtle, pachysandra, English ivy and wintercreeper (Euonymus fortunei)—should not be neglected, for they thrive in the shade. There are supposedly tender forms

BROAD-LEAVED EVERGREENS

Choice landscape material at attractive prices.

Buxus sempervirens, 12 to 15 ins. to 2 to 2½ ft.
Elaeagnus fruitlandi, 1½ to 2 ft. to 4 to 5 ft.
Euonymus klautschovicus, 1½ to 2 ft. to 4 to 5 ft.
Ilex cassine, 3 to 4 ft. to 5 to 6 ft.
Ilex convexa (bullata), 12 to 15 ins. to 18 to 24 ins.
Ilex rotundifolia, 15 to 18 ins. to 2 to 2½ ft.
Ilex opaca howardi, 2 to 3 ft. to 4 to 5 ft.
Ilex vomitoria, 2 to 3 ft.
Jasminum floridum, 1½ to 2 ft. to 3 to 4 ft.
Ligustrum japonicum, 2 to 3 ft. to 4 to 5 ft.
Ligustrum lucidum, 1½ to 2 ft. to 2½ to 3 ft.
Ligustrum lucidum repandens, 1½ to 2 ft. to 2½ to 3 ft.
Mahonia japonica bealei, 12 to 18 ins. to 2 to 2½ ft.
Nandina domestica, 15 to 18 ins. to 2 to 2½ ft.
Osmanthus fortunei, 1½ to 2 ft. to 2 to 2½ ft.
Osmanthus illicifolius, 1½ to 2 ft. to 2 to 2½ ft.

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of English ivy that grow well in a protected shady area—even a few that are considered only for indoor use. One could make quite a collection of ivies in his shaded rear garden, but there might not be much room for anything else.

Many bulbs are adapted, and they include scilla, narcissus and snowdrops. Periwinkle enjoys the company of bulbs such as scilla and makes a fine partner for shaded plantings.

The possibilities may be somewhat limited, but they become increasingly more in number when one lets his imagination run a bit—so, why not let yours?

PROGRAM AT BILLINGS

[Continued from page 10]

kets and is building a poor reputation for container stock. Mr. Morgensen believes that stock properly grown in colder areas will soon take over these sales.

Winter Care of Container Stock

The members were much concerned with methods of carrying container stock through the winter. At Casper, where winters are severe and snow cover is often light, Morgensen's sinks stock in pits, which are gradually flooded with water until the cans are in a block of ice. With the addition of snow fence for wind protection, the stock has wintered well. Cans have been obtained from bakeries and oil stations, Mr. Morgensen said, and a considerable supply can usually be built up locally through the year. Mr. Morgensen's talk was presented with humorous reflections of his experiences as a nurseryman.

After lunch, the meeting opened with a forum led by Leonard Yager, of the Montana State College extension service. Mr. Yager had been appointed the previous year to head a committee on plant lists and zoning for the Montana-Wyoming area. He presented each member with a 16-page manuscript, including a zone map of Montana and lists of suitable ornamentals for any planting requirements. A group discussion of the lists brought out local experience, which resulted in some changes and additions. When it has been revised, the list will be released through the Montana State College horticulture department and made available to nurserymen and extension services throughout the state. It is hoped to provide the same service for Wyoming nurserymen through the University of Wyoming.

Members were told of the difficulty

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Baker Arborvitae	20c
Excelsa Arborvitae	19c
Hetz Juniper	19c
Irish Juniper	15c
Von Ehron Juniper	20c
Yunnan Honeysuckle	17c
Nandina (2 to 3 plants per pot)	17c
Pyracantha, red	19c
Pyracantha, orange (Lalandi)	19c
Vinca Minor	17c
Vinca Major Variegated	17c

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encountered in reliably zoning mountain areas, due to the existence of many micro-climates when elevations change rapidly. Local experience cannot be entirely replaced by a standardized list. However, those present felt the work was a great stride forward, since many of the experiments now being conducted in local nurseries in quest of a greater variety of suitable types can be eliminated.

The election of officers was part of the concluding business session, with President Harry Warburton presiding. Later, open house at the Billings Nursery was again enjoyed.

STRAWBERRY PESTS

At a recent meeting of strawberry growers at Red Bluff, Calif., the nurserymen heard Dr. D. J. Raski, professor of nematology at the University of California, explain the identification of nematodes attacking strawberry plants. Dr. W. H. Hunt, nematologist, California department of agriculture, reported on progress of controlling the pests in the plants themselves and described tests conducted by Dr. R. S. Bringhurst, pomologist, University of California, Berkeley.

Dr. L. C. Glover, research entomologist, discussed soil fumigation and said that proper temperatures are as important as good soil preparation and choice of fumigant for control. He said that soil temperatures should be between 45 to 85 degrees for best soil fumigation. Edward Green, Tule Lake, stressed the importance of keeping application and other equipment clean. The importance of complete examination of a field for nematodes before planting was also stressed.

ROBERT J. MAGUIRE has been promoted to the position of sales manager, shade cloth division, Chicopee Mfg. Corp., Cornelia, Ga. He was formerly the company's Florida sales engineer.

DON C. BECK is starting Beck's Nurseries, 4520 Arkona road, Saline, Mich. He will sell shrubs at retail to start and plans to line out 10,000 evergreens next spring for eventual wholesale trade.

BLAKE TETIRICK, who with his uncle, Ted Tetirick, had operated the Tetirik Nurseries at Ponca City, Okla., for several years before selling the property, has been named representative in northern Oklahoma for Capitol Gardens, Oklahoma City.

PLANT PATENTS

The following plant patents were issued recently, according to Rummler, Rummler & Snow, Chicago patent attorneys:

No. 1507. Rose plant. Pedro Dot, Barcelona, Spain, assignor to Cole Porter, New York. A new and distinct variety of rose plant of the hybrid tea class, characterized particularly as to novelty by its vigorous habit of growth, the excellent form of its blooms and the retention of said form from bud to maturity, the great abundance of its flower petals, the firm texture of its flower petals and their consequent resistance to adverse weather conditions, the clear pink general color tonality of its blooms and the retention thereof, without significant fading or bluing, and the unusually strong and clear fragrance of its blooms.

No. 1508. Viola plant. Walter Willard Way, deceased, late of Santa Barbara, Calif., by Mabel P. Way, executor, assignor to Jackson & Perkins Co., Newark, N. Y. A new and distinct variety of viola plant of the viola hybrid class, characterized particularly as to novelty by its low-growing habit of growth, its heavy and clean foliage and its large white flowers, which are borne on plants that are reblooming and perennial in climatic regions corresponding to upstate New York.

No. 1509. Rose plant. Josephine D. Brownell, Little Compton, R. I. A new and distinct variety of rose plant, characterized by its color pattern, by its fragrance, by its form and color and by its wichuraiana traits.

No. 1510. Rose plant. Josephine D. Brownell, Little Compton, R. I. A new and distinct variety of rose plant, characterized by its color pattern, by its fragrance, by the form and color and by its wichuraiana traits.

No. 1511. Rose plant. Roy E. Shepherd, Medina, O., assignor to Edith C. Bosley, Mentor. The new and distinct variety of hybrid tea rose plant, characterized particularly by its exceptionally vigorous growing habit: by its healthy foliage, especially resistant to black spot, and by its large, well-formed blooms of distinctive coloring of blends of rose-doree to rose-red on the inner surface of the petals and much lighter tones of the same coloring on the outer surface.

No. 1512. Rose plant. Eugene S. Boerner, Newark, N. Y., assignor to Jackson & Perkins Co. A new and distinct variety of rose plant of the large-flowered polyantha class, characterized particularly as to novelty by its large, firm and stiff flower petals, which are resistant to rain; by its strong flowering stems and stiff necks, which always maintain the flowers facing upward, and by the buff yellow, lightly overcast with baryta yellow, general color tonality of its flowers, which lightens but does not fade completely even at the final stage of maturity.

JO-ANN'S GARDEN CENTER has been opened at 1736 South Muskego avenue, Milwaukee, Wis., by Joseph and Ann Malinowski.

NORTH ALABAMA LINERS—FIELD AND POT-GROWN
CONIFEROUS EVERGREENS

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***Juniperus chinensis pfitzeriana,** 2-yr.,		
6 to 8 ins., field-grown.	$22.50	$200.00
8 to 12 ins., field-grown.	27.50	250.00
Juniperus chinensis sargenti, 1-yr.,		
6 to 10 ins., field-grown.	15.00	.....
Juniperus communis ashfordi, 1-yr.,		
6 to 8 ins., field-grown..	10.00	90.00
8 to 12 ins., field-grown.	15.00	100.00
Juniperus communis canadensis, 1-yr.,		
6 to 10 ins., field-grown.	12.00	.....
Juniperus communis fastigiata		
Juniperus communis hibernica, 1-yr.,		
6 to 8 ins., field-grown..	12.00	100.00
8 to 12 ins., field-grown.	15.00	120.00
Juniperus conferta (Shore Juniper), 1-yr.,		
6 to 10 ins., field-grown.	12.00	.....
Juniperus excelsa stricta (Greek Juniper), 1-yr.,		
6 to 8 ins., field-grown..	12.00	100.00
8 to 12 ins., field-grown.	15.00	120.00
Juniperus glauca hetzi (Hetz Juniper), 1-yr.,		
6 to 12 ins., field-grown.	12.00	100.00

	Per 100	Per 1000
Juniperus horizontalis (Bar Harbor Green Juniper) 1-yr.,		
6 to 10 ins., field-grown.	12.00	100.00
2-yr.,		
8 to 12 ins., field-grown.	15.00	.....
Juniperus horizontalis plumosa (Andorra Juniper) 1-yr.,		
6 to 8 ins., field-grown..	12.00	100.00
8 to 12 ins., field-grown.	15.00	120.00
*2-yr.,		
8 to 12 ins., field-grown.	17.50	150.00
Juniperus sabina (Savin Juniper), 1-yr.,		
6 to 8 ins., field-grown..	10.00	85.00
8 to 12 ins., field-grown.	12.00	100.00
*2-yr.,		
8 to 12 ins., field-grown.	17.50	150.00
Juniperus sabina vonehron, 1-yr.,		
6 to 12 ins., field-grown.	12.00	120.00
Juniperus squamata meyeri		
2½-in. pots	25.00	.....
Thuja occidentalis pyramidalis		
2¼-in. pots	20.00	175.00
Thuja orientalis Blue Cone		
2¼-in. pots	20.00	175.00

*Root-pruned and twice sheared.

BROAD-LEAVED EVERGREENS

	Per 100	Per 1000
Abelia grandiflora, 1-yr.,		
6 to 12 ins., field-grown.	$ 6.00	$ 50.00
Berberis julianae		
2¼-in. pots	20.00	175.00
Berberis mentorensis		
2¼-in. pots	15.00	125.00
Cotoneaster divaricata		
Cotoneaster francheti, 2-yr., XX, 8 to 12 ins., field-grown	15.00	120.00
12 to 18 ins., field-grown	17.50	150.00
Euonymus carrierei 2-yr., XX,		
8 to 12 ins., field-grown.	15.00	125.00
Euonymus coloratus erectus 2-yr., XX,		
12 to 15 ins., field-grown	17.50	.....
Euonymus japonicus 2-yr., XX,		
6 to 12 ins., field-grown.	15.00	.....
Euonymus patens 2-yr., XX,		
8 to 12 ins., field-grown.	15.00	125.00
Euonymus vegetus		
2-yr., 2¼-in. pots	15.00	.....
Hypericum hidcote		
2¼-in. pots	15.00	120.00

	Per 100	Per 1000
Ilex cornuta burfordi		
2-yr., 2¼-in. pots (heavy)	17.50	150.00
3-yr., XX,		
8 to 12 ins., field-grown.	20.00	.....
Ilex crenata convexa		
Ilex crenata hetzi		
Ilex crenata rotundifolia		
2¼-in. pots	17.50	150.00
Ilex helleri		
2¼-in. pots	20.00	175.00
Jasminum floridum		
Jasminum nudiflorum		
2-yr., XX,		
8 to 12 ins., field-grown.	15.00	120.00
Viburnum burkwoodi		
2¼-in. pots	17.50	150.00

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INLAND EMPIRE CHAPTER

Red Hill Country Club, Upland, Calif., was the site of the monthly meeting and installation of officers of the Inland Empire chapter of the California Association of Nurserymen, September 11. President Jack Story, Armstrong Nurseries, Ontario, presided over the business meeting and installation. The secretary's annual report was read and showed a 12½ per cent increase in membership and above-average attendance at the monthly meetings.

The new officers and directors for 1956-57, ably installed by state director of C. A. N., David Stump, Armstrong Nurseries, were: President, Maurice Peairs, Claremont Nurseries, Claremont; vice-president, Robert Lindquist, Hemet Wholesale, Hemet; secretary-treasurer, Floyd Chambers, Kramer Bros. Nurseries, Upland, and directors: Jack Story, W. Reid Anderson, Garden Center, Riverside; Clark Thomas, Thomas Camellias, San Dimas, and James Hunt, Flowerland Nursery, San Bernardino.

After the installation, program chairman, Maurice Peairs, introduced Stanley Larson, a newspaper man from Claremont, Cailf., who gave a humorous discourse on "Manners," from an 1890 manual.

Frank Pollock, Matlin's Nursery, Ontario, chairman of the eighth annual fall rose growers' show scheduled at the Mission Inn, Riverside, October 12 and 13, reported the theme would be "Fashion in Roses." This show is sponsored by the Inland Empire chapter, in cooperation with the Riverside chamber of commerce, and is open to the public. D. C.

SUPERIOR CHAPTER

At the August meeting of the Superior chapter of the California Association of Nurserymen, officers for the coming year were elected. The new president is George Oki, Oki Nursery, Perkins; vice-president is Frank Dinwiddie, Valley Garden Store, Woodland; secretary is Jack A. Wick, Anderson's Nursery, Sacramento, and sergeant at arms is Edward Pope, Capel-Klang Co. State directors elected are Earl Lagomarsino, F. Lagomarsino & Sons, and Eugene Armstrong, Capital Nursery, both of Sacramento.

Business of the meeting included approval of the installation of a floriculture exhibit at the California state fair, in the chapter's name. The exhibit, which placed second and received a $500 award, was installed by Tak Kato and was designed by Jack Wick. Its theme was "Gardens Are for People," in honor of Thomas Church.

Also approved at the meeting was the support of the chapter members in donating the materials necessary for the landscaping of the Crippled Children's Center. Landscaping of the grounds was done by the local chapter of the Landscape Contractors' Association from a plan donated by Jack Anderson, local architect. The new building and grounds were completed for dedication ceremonies September 16.

Jack A. Wick, Sec'y.

OAKLAND GARDEN SHOW

The California garden show provided a 10-day display at the Oakland Exposition building at Oakland, Calif., beginning September 20. The show's more spectacular exhibits were presented in the Exposition building grounds adjacent to the building itself. Indoors were some cut flower displays and several trade exhibits. The garden featuring the show theme "Autumn Splendor," was built around the courtyard of a Spanish hacienda.

The McDonnell Nursery, Oakland, whose garden was designed by Ned Rucker, was given the show's highest award. Nobue Kuwabata, East Bay landscape architect, designed a garden which included a 12-foot waterfall and a lawn with dwarf trees and white, yellow and purple chrysanthemums.

Until this year the show had been held in the spring, and it was well known over the country as one of the major flower and ornamental plant shows. This year there were numerous fall-blooming plants and flowers, such as dahlias, tuberous-rooted begonias, fuchsias, pelargoniums and chrysanthemums. There were, as usual, many planting and patio ideas, and the educational fea-

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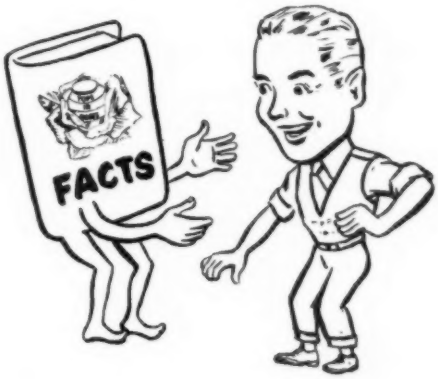

He DIDN'T

WRITE:

WEEKS WHOLESALE ROSE GROWER

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tures seemed about equal to those of the spring exhibits.

The attendance was not so good as it had been hoped, and now a decision will have to be made whether succeeding shows will be for spring or fall, or if the entire project will be dropped. W. B. B.

CALIFORNIA ARBORISTS

After a 2-month interval, the California Arborists Association held a meeting in the offices of the San Mateo county commissioner at Redwood City, Calif., September 19. Attendance was above average.

H. P. Anderson, Perry Laboratories, Mount View, was the speaker, his topic being "New Ideas on Soil Treatment." Mr. Anderson told of experiences with unusual conditions in soils and how they were detected and overcome. He also discussed the several kinds of sequestrenes now available and gave his opinion on the need for those products. He made his report on the value of organics as fertilizers, either alone or in combination with chemicals, and told about the discoveries in the uses of urea. He reported that he found few cases of acid soil in the area this group was likely to be working in and he gave some information

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on the ways of correcting excess soil acidity or alkalinity.

Roger Sohner and Keith Davey gave a report on the National Shade Tree Conference meeting which they attended in Canada.

Ernest Higgins, who has been active in the work of the California horticultural council, made a report on that organization. The council had been organized to represent all branches of horticulture on both the amateur and the professional levels. It sponsored specialized organizations of horticulturists and assisted them in becoming organized and able to operate on their own. The California Arborists Association was a member of the council and at first received assistance from the council. In the more recent past, the arborists have given the council help through group membership and in other ways.

Now, according to Mr. Higgins, it is felt by the officers that its objectives have been attained and that there is no further need for the council. As a result, no further meetings will be held and no further dues will be collected. About $500 remains in the treasury, and it has been decided to use the funds to publish a complete report of the activities of the council.

The next meeting of the arborists will be held October 17. W. B. B.

CALIFORNIA NOTES

San Mateo county again won top honors for county exhibits at the California state fair at Sacramento, Calif., this fall. The booth used by the county carried out the centennial idea, this being the county's centennial year. The garden was laid out with a startling black and white effect. An adobe house in the background gave the thought of 1856; the modern flowers in modern vases reminded one that it really is 1956.

The annual turf conference will be held at Rickey's, at Palo Alto, February 1, 1957. In the morning there will be talks and panel discussions on turf management and varieties of grasses for various purposes. In the afternoon the group will visit the grass trial plots of the Ferry-Morse Seed Co. at Mount View.

Floyd Dillon and his son Don, doing business as the Four Winds Growers, at Mission San Jose, are expanding their dwarf citrus activities again. The firm has been at its present location for about three years, after several years in Ventura county. The dwarf citrus plants are currently being used almost exclusively as decoratives, handled by the retail ornamental nurseries in the

state. Mr. Dillon reports that two large commercial citrus growers have found that the dwarf trees come into bearing earlier than others, and as each tree produces nearly as much high-quality fruit and yet needs but one half the space of the regular type, the dwarf citrus now shows distinct possibilities as a fruit-producing tree.

Mrs. Hal Tibbets is operating the Mission Nursery, at Mission San Jose, entirely as her own project since the death of her husband about six months ago.

Attorney Emerson Rhyner of the state department of highways reported at a recent meeting of chambers of commerce officials who were discussing new freeways in the state that gas tax funds can be used for freeway beautification. Until now there has been no formal opinion on that phase of the work, and such plantings as have been made have been squeezed through as windbreaks or soil-erosion projects.

Mayor George Christopher of San Francisco has asked for an appropriation of $4,000 for landscaping the Civic Center plaza after the underground convention exhibit hall and garage which are now being built are completed.

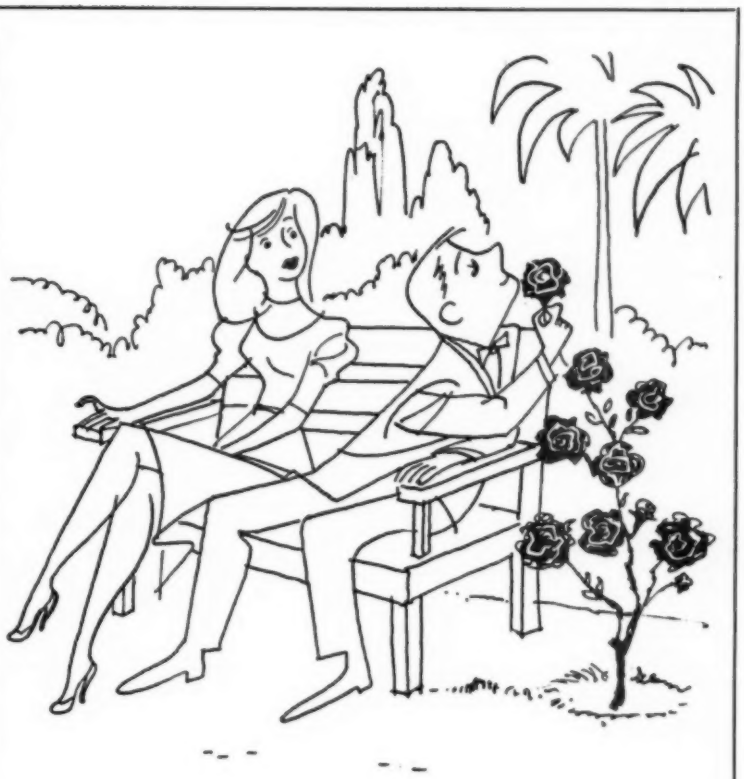
Robert Deering, assistant professor of landscape management, University of California in Davis, made a report on drought-tolerant ornamentals for California in a recent issue of California Agriculture.

Arthur E. Navlet, retired Oakland nurseryman, is being given credit now for his efforts in developing what is considered one of Oakland's greatest tourist attractions, the Children's Fairyland.

Dr. L. A. Waitzinger will repeat and expand his garden workshop courses at the Palo Alto adult education sessions this fall. The workshop is open to and attended by commercial as well as amateur gardeners and proceeds on the learn-by-doing theory.

Entomologists in the state are happy over the apparent eradication of the Hall scale, which is a threat to peaches, prunes, apricots and some others among the state's fruit crops, while at the same time the plant pathologists are viewing with alarm the discovery in Kern county of the most dreaded of the citrus diseases, quick decline. Steps have been taken to isolate the disease in the Delano area, where it has been discovered. It has been a serious pest in Los Angeles county for many years.

The annual meeting to report on



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One of the leaders in canned stock as well as field-grown.

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the progress of developing strains of California natives for various ornamental purposes was held at the Saratoga Foundation, Saratoga, October 4. In the afternoon there were sessions on the handling and growing of plants in containers.

Sal's Nursery, Mount View, celebrated the end of one full year in business with a well advertised sale of plants and garden supplies.

Arch R. Frazier, 49, employed by a Woodside tree surgeon, was killed when his car crashed into a giant redwood tree on the Skyline boulevard near Woodside September 18. He is survived by his widow, residing on Big Tree way, in Woodside.

Tom Furuichi, Los Altos nurseryman, was one of the officials who took part in the ground-breaking ceremonies for the new Tri-City Buddhist Association Sunday school building at Mount View. W. B. B.

OREGON NOTES

Mrs. Julia Hausch, Roseway Nurseries, Beaverton, discussed rose types recently at a meeting of the Jennings Lodge Garden Club.

A portrait of Ambrose Brownell, Brownell's Holly Farm, Milwaukie, accompanied an article in the September 13 issue of the Brookings-Harbor Oregon Pilot, in connection with his recent visit to the Rotary Club there in his capacity as district governor of Rotary.

Melvin Surface, Surface Nursery, Gresham, president of the Oregon Association of Nurserymen, called a meeting of the board of directors for October 3, at the Portland Wholesale Nursery Co. offices. The board viewed the recent O. A. N. convention at Gearhart and laid the final plans for the main annual winter convention to be held January 24 and 25, 1957, at the Multnomah hotel, Portland. Also at the meeting was Dr. A. N. Roberts, Oregon State College, who put before the board members the proposed plan for an annual short course for nurserymen, bulb men, florists and landscape men.

Oriental arborvitae in home gardens in Multnomah county have been suffering from a die-back disease to the extent that county agent Wayne Roberts has advised homeowners how to treat the disease where it shows up. C. H. P.

TANNER'S NURSERY, D street, Berris, Calif., recently won top honors in the new outdoor living section of the Hemet farmers' fair. It was judged the best of eight commercial nursery exhibits.

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Flowering Crab Apples, many varieties
Flowering Cherries
Flowering Plums
Norway Maples, branched, all grades
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And Many Other Items

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Collectors of Tree, Shrub and Wild Flower Seeds
Crude Drugs and Ornamentals
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Boskoop, Holland
Reliable exporters for general nursery stock since 1922.
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PEACH CROP REPORT

Peach trees of all ages on United States farms in 1954 numbered 36,912,804, with 26,175,125, or 70.9 per cent, in 100 leading counties, according to 1954 census of agriculture figures. Peaches harvested amount to 55,125,161 bushels, with 46,498,872 bushels in the 100 counties which led in number of trees.

Stanislaus county, California, was the leading peach county, with 2,295,132 peach trees—6.2 per cent of the United States total—and a harvest of 8,301,917 bushels.

Spartanburg county, South Carolina, was second in number of trees with 1,908,992, and seventh in quantity harvested with 1,624,993 bushels.

OPENED at Moss Beach, Calif., was the Allsworth Nursery, by Mr. and Mrs. Clifton Allsworth.

EAST LAWN NURSERY, Sacramento, Calif., won a special trophy for the best outdoor exhibit at the recent state fair at Sacramento.

STRAHM-EMBURY is the name of a new tree care and insect control firm at Kentfield, Calif., operated by John R. Strahm, Woodacre, and Meldon A. Embury, San Anselmo.

CAMBRIAN NURSERY, 937 South San Jose-Los Gatos road, Campbell, Calif., was recently opened. George, Joe and Don Kikuchi and Yas Kawaguchi are the owners and operators.

LUCKY'S NURSERY, 10222 Westminster boulevard, Garden Grove, Calif., operated by George and Lucille Ragsdale, is constructing a new ranch-style building to house a number of departments of the farm.

CHARLES G. VOGELS, landscape architect at Covina, Calif., recently donated an annual $150 scholarship for the outstanding junior student at California State Polytechnic College, San Luis Obispo, in the field of ornamental horticulture. A former student of the college, Mr. Vogels wishes to encourage the study of ornamental horticulture there.

DICK KEISEL, of the Evergreen Nursery, Costa Mesa, Calif., talked on gardening and insect control recently before the Green Thumb Garden Club. Members brought samples of foliage showing insect damage which the speaker analyzed, telling of remedies. He explained whether the damage was caused by insects or by water and soil conditions.

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ADRIATIC: Large, vigorous tree, lots of medium sized white figs.

CALIMYRNA: Large white fig with strawberry pulp, rich flavor. Good as fresh fruit, canned or dried. Prune tree annually for dwarf appearance. Requires caprification.

BLACK MISSION: Large tree. Excellent fruit fresh or dried. Blue black—strawberry pulp.

BROWN TURKEY: Purplish black pear-shaped fruit — medium to large. Table use.

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ROEDING NO. 3: For caprification only. Fruit worthless.

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Cash in now on Stribling's Growing Quality . . . developed and field-proven in the fig-rich San Joaquin Valley.

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(Helleborus niger multiflorus strain)
Propagated and grown in Oregon
10,000 LINERS, FRAME-GROWN, NOT T.
$19.00 per 100; $170.00 per 1000
2000 LINERS, BED-GROWN, T.
$35.00 per 100; $320.00 per 1000
Delivery October 15 to April 15.
50 at 100 rate, 250 at 1000 rate.
SAXTON & WILSON
Growers of
Distinctive Hardy Plants
MAPLEWOOD, ORE.

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Wholesale only
FRUIT TREE SEEDLINGS
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Wholesale Propagators of Evergreen Liners
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Instructions for the November 1 issue must be received by Friday, October 12.

Forms for November 15 issue will close Friday, October 26.

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OVER 80,000
SIZES RANGING FROM 4 ins. to 8 ft.
(Not all sizes in all varieties.)
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Quality, priced right.
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AZALEA HINODEGIRI
Field-grown, bushy plants.

	EACH, 10 rate	25 rate	100 rate
10 to 12 ins.	$ 2.00	$1.75	$1.50
12 to 15 ins.	2.25	2.00	1.75
15 to 18 ins.	3.25	3.00	2.75
18 to 21 ins.	4.50	4.00	3.50
21 to 24 ins.	5.50	5.00	4.50
24 to 28 ins.	8.00	7.50	...
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Also sizes up to 5 ft.
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for forcing or landscape planting.
Grown under ideal conditions in our own native mountain area.
CORAL BELLS, HINODEGIRI.
8 to 10 ins. $1.10
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October shipment.
Red Wing, from 5-in. pots, $75.00 per 100. Coral Bells, from 3-in. pots, $25.00; 4-in. pots, $35.00; 6-in. pots, $100.00 per 100.
Hinodegiri, from 6-in. pots or gal. cans, $125.00 per 100.
Snow, from 4-in. pots, $35.00; 6-in. pots, $125.00 per 100.
Nice, well-branched plants, 6-in. pot stock, 10-in. heads and better.
Cash, please; no packing charge.
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	Each, 100	1000
4 to 6 ins.	$0.45	$0.40
6 to 8 ins.	.80	.70
8 to 10 ins.	1.15	.90
10 to 12 ins.	1.40	1.15
12 to 15 ins.	1.75	1.50

10c additional for burlapping.
No packing charges if cash is received with order. Delivery at cost.
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Prices on pot-grown and flat-grown Azaleas, $14.00 per 100, $125.00 per 1000.
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Black Raspberry, transplants and 1-yr. tips: Dundee, Logan, Cumberland, Bristol and Shuttleworth.
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PARROT TULIPS, 7½c each:
Blue Parrot (blue), Orange Favorite (orange), Sunshine (bright yellow), Red Champion (red), Black Parrot (blue-black).
REMBRANDT TULIPS, 7½c each:
Cordell Hull (variegated white and red).
TULIPA FOSTERIANA, 10c each:
Red Emperor (large scarlet).
COTTAGE TULIPS, 7½c each:
G. W. Leak (crimson and orange), Carrara (white), Marjorie Bowen (yellow edged scarlet).
BREEDER TULIPS, 5c each:
Dillenburg (orange-scarlet)
TRIUMPH TULIPS, 5c each:
Kansas (white).
CROCUS, blooming size, 7 to 8 cm., 4c each:
King of the Blues, King of the White.
MUSCARI (Grape Hyacinth), 2c each.
SCILLA (Camp., mixed), 2½c each.
SNOWDROPS, 4c each.
GIANT YELLOW TRUMPET DAFFODILS, 6½c each, $6.00 per 100:
Golden Harvest, Music Hall, King Alfred, Solario.
DUTCH IRISES, 8 to 9 cm., 5c each:
Golden Harvest, White Excelsior, Wedgwood.
HYACINTHS, bedding size, 15 to 16 cm., 10c each:
Pink Pearl (deep rose), La Victoire (carmine-red), L'Innocence (pure white), Bismarck (sky-blue), King of the Blues (deep blue), City of Haarlem (golden yellow).
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MADONNA LILY, jumbo size, blooms Decoration day, 35c each.
REGAL LILIES, 15c each.
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IMPORTED BULBS
Immediate delivery. Per 1000; 100 same rate.
We have the following, 12 cm. or top-size Tulip bulbs on hand, $39.00 per 1000: Bartigon, bright red; Dillenburg, salmon-orange; Glacier, ivory-white; Margeaux, wine-red; Krelage's Triumph, red; Pride of Haarlem, rose-red; Yellow Giant, yellow; Pride of Zwanenburg, pink; Wm. Copland, lavender; Wm. Pitt, scarlet; Queen of Night, black.
We also have the following, 11 to 12 cm. or No. 1 Tulips on hand, $34.00 per 1000: Prince of Austria, orange-scarlet; Prince Carnival, yellow-red; Gen. de Wet, orange; Olympiade, yellow; Van der Neer, purple; Peachblossom, double pink; Orange Nassau, double orange; Schoonoord, double white; Mr. Van der Hoef, double yellow; Electra, double red.
Imported Hyacinths, 15 to 16 cm., $59.00 per 1000: Jan Bos, red; King of the Blues, deep blue; L'Innocence, white; City of Haarlem, yellow; Queen of the Pinks, Lord Balfour, violet.
King Alfred yellow Daffodil, D.N. II, $57.00 per 1000.
Cash with order, please. F.O.B. Mt. Clemens. Add 25 per cent for parcel post.
KABEL'S BULB FARM
R. R. 3 Mt. Clemens, Mich.
Phone HOward 30790

DAFFODILS FOR NATURALIZING
Michigan-grown and inspected.
Double nosed and round.
Mixed, 1000, $45.00; 100, $6.00.
Cash, please.
VERONA GARDENS
Route 5 Battle Creek, Mich.

Surplus Stock
can be easily and quickly turned into
Cash
by listing it in the
American Nurseryman Classified Ads

CAMELLIAS

CAMELLIA SASANQUA
IN GALLON CONTAINERS
Excellent for retail sales.
BROADLEAF GARDENS
Route 13 Onley, Va.

CHESTNUTS

CHING CHOW
CHINESE CHESTNUT SEED
Ready now.
(Nanking—Hemming Line P.I. 70314.)
Blight resistant
Less than 1 per cent weevil.
From
EASTERN SHORE OF MARYLAND
Prices in quantity as low as 30c per lb.
Write for price list and description.
DR. J. WESLEY EDEL
(Prospect Plantation)
Grasonville, Md.
Phone Queenstown, Md., 4444

SEED CHESTNUTS
Castanea mollissima, fall 1956 crop. 35c per lb. F.O.B. Trappe, Md.
COMPTON FARM
c/o J. M. Arensberg, agent
1404 1st Natl. Bank Bldg., Pittsburgh 22, Pa.

Quick — Convenient — Cheap!
Selling through the Classified Ads of the American Nurseryman.

EVERGREENS

EVERGREEN LINERS AND CUTTINGS
FIELD-GROWN TRANSPLANTS
HEAVY, TRACTOR-CULTIVATED STOCK

	Each, 100	1000
Taxus hicksi, 10 to 15 ins., 5-yr.	$0.80	$0.75
Taxus cuspidata, 10 to 15 ins., 5-yr.	.80	.75
Taxus intermedia, 10 to 15 ins., 5-yr.	.80	.75
Arborvitae, pyramidal, 10 to 12 ins., 3-yr.	.45	.42
Arborvitae, globe woodwardi, 8 to 12 ins., 3-yr.	.37	.35
Arborvitae, Am., nigra, dark green, 10 to 15 ins.	.45	.42
Juniperus pfitzeriana, 8 to 12 ins.	.45	.42
Juniperus pfitzeriana, 12 to 18 ins.	.65	.60
Juniperus glauca hetzi, 8 to 12 ins.	.45	.42
Juniperus glauca hetzi, 12 to 18 ins.	.65	.60

POT-GROWN STOCK
Sprayed with Parathion 3 times annually.
Potted in special clay peat fertilizer mixture.
Grown in open lath house or outside frames.
No light, soft greenhouse-grown stock.

	Each, 100	1000
Arborvitae, American, dark green, 1-yr., 6 to 7 ins.	$0.27	$0.25
Arborvitae, globe woodwardi, 1-yr., 5 to 6 ins.	.27	.25
Arborvitae, pyramidal, 1-yr., 5 to 6 ins.	.27	.25
Juniperus pfitzeriana armstrongi, 1-yr., 4 to 5 ins.	.27	.25
Juniperus chinensis pfitzeriana, 1-yr. pots, 6 to 7 ins.	.27	.25
Juniperus chinensis pfitzeriana, 2-yr. pots, 6 to 9 ins.	.30	.28
Juniperus glauca hetzi, 1-yr., 6 to 7 ins.	.27	.25
Taxus hicksi, 2-yr., 5 to 6 ins.	.30	.28
Taxus andersoni, 2-yr., 6 to 9 ins.	.34	.32
Taxus cuspidata, 2-yr., 6 to 9 ins.	.34	.32
Taxus media compacta, spreading, 2-yr., 6 to 9 ins.	.30	.28
Euonymus alatus compactus, 2-yr., 6 to 7 ins.	.22	.20
Korean Boxwood, 1-yr., 3 ins.	.22	.20
Viburnum, leather-leaved; 2-yr. pots, 6 to 9 ins.	.30	.28
Viburnum burkwoodi, 1-yr., 4 to 5 ins.	.22	.20

HEAVY ROOTED CUTTINGS
From flats, growing outside in lath house.
Ready for deivery now.
These extra hardy, outside-grown cuttings can be potted any time, spring, summer, fall.
No soft greenhouse-grown stock.

Boxwood, Korean, hardy, 3 ins.	$0.11	$0.10
Euonymus alatus compactus, 3 to 4 ins., 2-yr., branched	.09	.08
Juniperus glauca hetzi, 5 ins.	.13	.12
Juniperus chinensis pfitzeriana, 6 to 7 ins.	.13	.12
Arborvitae, pyramidal, 5 to 6 ins.	.13	.12
Arborvitae, globe, 4 to 6 ins.	.13	.12
Arborvitae, American, dark green; 5 to 6 ins.	.13	.12
Taxus hicksi, 5 ins.	.13	.12
Taxus intermedia, 3 to 4 ins.	.13	.12
Taxus cuspidata, 5 ins.	.13	.12
Taxus andersoni, 4 to 5 ins.	.13	.12
Taxus media, 3 to 4 ins.	.13	.12
Taxus hatfieldi, 3 to 4 ins.	.13	.12
Taxus browni, 3 to 4 ins.	.13	.12

MEYER Z-52 ZOYSIA GRASS
Producers of Meyer Z-52 Zoysia.
Superior lawn grass.
Fresh cut from our nursery.
$50.00 per 1000, 2-in. plugs.
TERMS: Packing and boxing free. 3 per cent discount for cash with order.
Our stock guaranteed 100 per cent satisfactory or return within 6 days for full refund, plus full shipping charges paid.
250 plants of each variety at 1000 rate.
MIAMI NURSERY CO.
Tipp City, O.

LINING-OUT STOCK

POT-GROWN	Per 1000 rate
Berckmans' biota aurea nana, 1-yr.	$0.18
Biota bonita, upright; 1-yr.	.18
Hetz glauca Juniper, 1-yr.	.16
Pfitzer Juniper, 1-yr.	.16
Pfitzer Juniper, 2-yr.	.18
Von Ehron Juniper, 1-yr.	.16
Euonymus japonicus, 1-yr.	.15
Ilex crenata convexa bullata, 2-yr.	.17
Ilex crenata rotundifolia, 2-yr.	.17
Ilex cornuta burfordi, 1-yr.	.15
Ilex cornuta burfordi, 2-yr.	.18
Ilex cornuta femina, 1-yr.	.18
FIELD-GROWN	
Andorra Juniper, 1-yr., 8 to 12 ins.	.14
Biota bonita, upright; 2-yr., 8 to 12, XX	.22
Hetz Juniper, 1-yr., 6 to 10 ins.	.14
Greek Juniper, 1-yr., 8 to 12 ins.	.14
Pfitzer Juniper, 1-yr., 6 to 10 ins.	.14
Pfitzer Juniper, 2-yr., 8 to 12 ins., XX	.16
Irish Juniper, fastigiata, 1-yr., 8 to 12 ins.	.12
Ligustrum lucidum compactum, 1-yr., 10 to 14 ins.	.12
Nandina domestica, 2-yr., bed-grown	.10
Euonymus patens, 1-yr., 8 to 12 ins.	.14
Ilex burfordi, 3-yr., bed-grown, XX	.35
Pfitzer Juniper, 3-yr., field-grown, XX	.25

Terms: 2 per cent discount for cash with order. Free packing. 250 plants at the 1000 rate. Add 2c for each plant on orders of less than 250 plants. C.O.D. orders require 25 per cent deposit before delivery. 25 per cent of purchase amount will hold for later delivery. Priced F.O.B. nursery.
WRITE FOR B&B PRICES.
E AND S NURSERY
Caledonia, Miss.
Phone EL-65342, Columbus, Miss.

EVERGREEN LINERS

	Each, 100	1000
BERCKMANS' BIOTA A. N. Field-grown, 2-yr.	$0.40	$0.35
HETZ GLAUCA JUNIPER 2½-in. pots, 1-yr.	.22½	.18½
PFITZER JUNIPER 2½-in. pots, 1-yr.	.22½	.18½
Field-grown, 2-yr.	.35	.30
Rooted cuttings	.13	.12
BURK JUNIPER 2½-in. pots, 1-yr.	.27½	.22½
ARMSTRONG PFITZER JUNIPER 2-in. pots, 1-yr.	.22½	.18½
2-in. pots, 2-yr.	.26½	.22½
Field-grown, 3-yr.	.45	.40
BLUE PFITZER JUNIPER 2½-in. pots, 1-yr.	.25	.20
Field-grown, 2-yr.	.35	.30
Rooted cuttings	.14	.13

TERMS: Cash with order. Free packing.
Orders for spring held for one-fourth deposit.
300 plants of one variety at 1000 rate.
Not less than 50 of a variety.
VOGE NURSERY
New Lebanon, O.

PINE, SPRUCE SEEDLINGS

AND LINERS	100	1000
Scotch Pine, 2-yr., 4 to 8 ins.	$4.00	$25.00
(Best we have ever offered. Quantity discounts.)		
Scotch Pine, 3-yr., 8 to 14 ins.	5.00	35.00
Colo. Blue Spruce, 4-yr., 6 to 12 ins.	8.00	50.00
Juniperus glauca hetzi, 2-yr., 6 to 12 ins.	25.00	....
Spreading Jap. Yew, 3-yr., 4 to 8 ins.	30.00	....

Write for complete list.
PAINT CREEK NURSERIES
R. D. 1 Shippenville, Pa.

EVERGREENS	100	1000
Scotch Pine, 2-yr., 4 to 8 ins.	$3.50	$20.00
Scotch Pine, 3-yr., 6 to 12 ins.	7.00	35.00
Scotch Pine, 2-i, 5 to 9 ins.	7.00	40.00
Scotch Pine, 2-2, 10 to 20 ins.	12.00	65.00
Red Pine, 2-yr., 2 to 4 ins.	3.50	20.00
Red Pine, 3-yr., 6 to 14 ins.	6.00	30.00
Austrian Pine, 2-yr., 3 to 6 ins.	3.50	20.00
Austrian Pine, 3-yr., 6 to 12 ins.	6.00	30.00
Norway Spruce, 2-yr., 3 to 5 ins.	3.50	20.00
Norway Spruce, 3-yr., 6 to 14 ins.	7.50	40.00
American Arborvitae, stocky well-branched trees, 3-yr., 4 to 9 ins.	6.00	30.00

CHAPMAN NURSERY
553 Church St. Indiana, Pa.

GRADED SEEDLINGS and TRANSPLANTS

2-YR. SEEDLINGS	100	1000
Riga Scotch Pine, 4 to 8 ins.	$5.00	$25.00
Blue Douglas Fir, 3 to 6 ins.	5.00	25.00
Green Douglas Fir, 3 to 6 ins.	5.00	25.00
4-YR. TRANSPLANTS		
Colo. Blue Spruce, 6 to 10 ins.	20.00	....
Mugho Pine (Tyrolean), 4 to 8	15.00	....

Cash with order, please. Packing free.
F.O.B. ANGOLA.
ARTHUR CASH NURSERY
Lake Shore Rd. Angola, N. Y.

TAXUS CUSPIDATA CAPITATA
For fall or spring. 2-yr. seedlings, grown from Jap. seeds; very fine root system.
$9.00 per 100, $75.00 per 1000.
10,000 up, $65.00 per 1000.
Also 1-yr. bedded cuttings in leading varieties of Taxus. Write for list.
NURSERY SALES, INC.
P. O. Box 295 Ridgewood, N. J.

3000 LIGUSTRUM LUCIDUM
Green, bushy, 18 to 30 ins., $1.40 each, you dig; 30c extra B&B.
SNOW'S NURSERY
Phone 2-6951 Charlottesville, Va.

TAXUS CAPITATA
Heavy 3-yr. seedlings, 3 to 8 ins.
$25.00 per 100, $175.00 per 1000.
Samples of 5 at $1.00, postpaid.
PINE, SPRUCE, FIR,
ORNAMENTAL SEEDLINGS
Complete list on request.
SCOTCH, AUSTRIAN, WHITE PINE,
COLO. BLUE CHRISTMAS TREES
DENTON NURSERY
Route 1 Conneaut, O.
Phone Kingsville 40299

B&B EVERGREENS, CERTIFIED
Nursery-grown transplants.
Specimens, hedges, windbreaks, screenings.
Carefully dug.
Red Pine, Scotch Pine,
Norway Spruce, White Spruce.
All sizes.
Visit or write for prices and discounts.
HARVARD TREE FARM
Pleasant St. Athol, Mass.

PIERIS JAPONICA
(Andromeda)

	Per 100	Per 1000
2-yr. liners, TTT	$40.00	$350.00
2-yr. peat bed, 6 to 8 ins., TT.	30.00	250.00
2-yr. peat bed, 4 to 6 ins., TT.	20.00	175.00
1-yr., branched, T	10.00	90.00

ECKHARDT NURSERIES
16 Toppa Blvd. Newport, R. I.

EVERGREEN LINERS	100	1000
Taxus cuspidata, 3-yr., twice transplanted, 10 to 12 ins.	$45.00	$400.00
Juniperus glauca hetzi, 3-yr., twice transplanted, 12 to 15 ins.	40.00	....
Retinospora aurea, 3-yr., twice transplanted, 15 to 18 ins.	35.00	....

All above sheared and well-rooted.
NEIDEL'S NURSERY & GREENHOUSE
Mtd. Rt. 4, Hasson Heights Oil City, Pa.

SHEARED PFITZER JUNIPER

	Each
300 Pfitzer Juniper	$2.50
200 Pfitzer Juniper	2.75

B&B at nursery.
KERN NURSERY
600 S. 25th St. New Castle, Ind.

JUNIPER GRAFTS
We have a surplus above our fall planting needs: 600 canaerti, 800 burki, 200 keteleeri, and possibly a few other varieties. Grafts were made last winter and are a good buy, in 2½-in. pots, at 15c each.
T. C. CRUME NURSERY &
LANDSCAPING CO.
Highway 42 Florence, Ky.
Phone Atlantic 3-2361

Fine, strong rooted cuttings, $8.00 per 100, $75.00 per 1000. Pfitzer's Juniper, Globe Arborvitae, Taxus cuspidata, capitata and hicksi; Ilex microphylla, Laland's Firethorn, Pieris japonica, Leucothoe catesbaei, Pieris japonica, 2-yr. transplants, 6 to 8 ins., 20c; 8 to 10 ins., 25c; 10 to 15 ins., 35c. Peat ball, Pachysandras, rooted cuttings, $4.00 per 100, $35.00 per 1000. Westwood Gardens, 54 Lane Ave., Caldwell, N. J.

EVERGREEN LINERS

Junipers	Per 100
1000 Pfitzer, 4-yr., XX, heavy, sheared, 12 to 15 ins.	$55.00
500 Pfitzer, 3-yr., XX, 9 to 12 ins.	40.00
1000 Von Ehron, XX, hvy., 12 to 15 ins.	55.00

Deduct 10 per cent for shipment this fall or cash with order.
DAMASCUS NURSERIES
Damascus, O.

EVERGREENS, ROOTED CUTTINGS

	Per 100	Per 1000
Ilex burfordi	$5.00	$45.00
Ilex bullata	5.00	45.00
Ilex rotundifolia	5.00	45.00
Gardenia fortunei	4.00	35.00
Ligustrum lucidum	4.00	35.00

Write for a complete list of rooted cuttings.
FLOWERWOOD NURSERY, INC.
P. O. Box 185 Cairo, Ga.

EVERGREENS, B&B

	Each
400 Andorra Juniper, 18 to 24 ins.	$2.25
200 Andorra Juniper, 2 to 2½ ft.	2.50
300 Am. Arborvitae, 4 to 5 ft.	3.25
1000 Hetz glauca Juniper, 18 to 24 ins.	2.25

These are nice. Come and see them. Order early, please.
WHERRY'S NURSERIES, St. Marys, W. Va.

TAXUS CAPITATA
Strong 2-yr. seedlings, seeds sown lightly, plants grown with plenty of room in beds.
$15.00 per 100, $125.00 per 1000.
C. HOOGENDOORN NURSERIES
Newport, R. I.

ANDORRA JUNIPER LINERS

	Per 100	Per 1000
Field-grown, 8 to 12, T	$17.00	$165.00

We have only a few thousand to offer this fall.
WHERRY'S NURSERIES, St. Marys, W. Va.

BERCKMANS' BIOTA AUREA NANA
100,000 5 to 7 ins., 12c each.
THE BUSH RANCH
140 Woodland Dr. Thomasville, Ga.

EVERGREENS—*Continued*

PIERIS JAPONICA (ANDROMEDA)

	Per 100	Per 1000
1-yr., T, 2 to 3 ins.	$8.00	$75.00
Seedlings, 1 to 2 ins.	6.00	50.00

PLANE VIEW NURSERY
West Rd. Newport, R. I.

NANDINA PLANTS
3 to 4 ins. high, bed-grown, $30.00 per 1000. 500 at 1000 rate. Cash.
KRONE'S FLOWER SHOP & NURSERY
4221 Grand Ave. Fort Smith, Ark.

PIERIS JAPONICA
Out of 2-in. pots, $17.50 per 100, $150.00 per 1000. F.O.B. Elizabeth, N. J.
DELAWARE VALLEY NURSERY
948 N. Broad St. Elizabeth, N. J.

FRUIT AND NUT TREES

PEACH TREES (Northern Ohio Grown)

	Per 100	Per 1000
1-yr., 9/16 to 11/16, 4 ft. up..	$65.00	$600.00
1-yr., 7/16 to 9/16, 3 ft. up..	50.00	450.00
1-yr., 5/16 to 7/16, 2 ft. up..	35.00	300.00

Champion	Golden Jubilee
Cumberland	Hale Haven
Dixired	Kale Haven
Dixigem	Lizzie
Elberta	Red Haven
Fair Haven	Shipper's Late Red.

THE FRENCH NURSERY CO.
Clyde, O.

CRAB APPLE AND FLOWERING PEACH LINERS ARE SCARCE ITEMS.
For fall delivery, we offer Flowering Crab Apple, Flowering Peach, purple-leaved Plum, Dogwoods, pink and white flowering, and many others.
Fruit tree liners: Apple, Peach, Pear and Plum. Hundreds of customers are pleased with our liners, so write for prices if not on our mailing list.
GLOBE NURSERIES
"Economy Headquarters"
Box 249 McMinnville, Tenn.

CELESTIAL FIG
Good strong quality, will please you. No packing charge.

15 to 18 ins.	$0.20
18 to 24 ins.	.30
2 to 3 ft.	.40
3 to 4 ft.	.50
4 to 5 ft.	.60

McKEE'S NURSERY
P. O. Box 749 Covington, La.

Peach trees, 10,000 1-yr. buds, irrigated, top-quality stock at less than 10c per foot. Liberal grading. 4 to 5 ft., $40.00 per 100; 5 to 6 ft., $50.00 per 100. Varieties: Elberta, Red Haven, Belle of Georgia, Early Elberta. Packing free, 25 per cent with order. Write for our list on grafted Walnuts, Cherries, 1 and 2-yr. Concord Grape vines.
Clinger's Nursery, Highway 71 W, Rogers, Ark.

GARDEN ROOTS

Chipman's Canada Red and MacDonald Red Rhubarb, good No. 1 divisions. Write for prices.
Chapman's Berry Farm, East Leroy, Mich.

GERBERAS

DOUBLE GERBERAS
Domoto's Award of Merit Strain, double.
First wholesale offering

	Per 100	Per 1000
Large divisions	$50.00	$450.00

250 at 1000 rate. No C.O.D. F.O.B. Hayward.
TOICHI DOMOTO NURSERY
26591 Western Rd. Hayward, Calif.

GROUND COVERS

GROUND COVERS

FALL 1956, SPRING 1957 DELIVERY. QUALITY AND QUANTITY FOR LARGE LANDSCAPE JOBS AND GARDEN SHOP SALES.

	Per 100	Per 1000
EUONYMUS fortunei (ACTUS)		
1-yr. pots	$12.50	$110.00
2-yr. pots	15.00	140.00
EUONYMUS fortunei COLORATUS		
1-yr. pots	12.50	110.00
2-yr. pots	15.00	140.00
AJUGA REPTANS RUBRA		
1-yr. pots	15.00	125.00

(300 AT THE 1000 RATE.)

CUNNINGHAM GARDENS, INC.
Waldron, Ind.

HARDY MYRTLE
(Vinca minor, Periwinkle)
Fresh dug, hand-clumped, 20 to 25 canes, $50.00 per 1000.
Sphagnum packed in ventilated cartons.
HONEYSUCKLE (japonica halliana)
$45.00 per 1000.
EUONYMUS, vegetus and coloratus
Strong rooted, $60.00 per 1000.
PACHYSANDRAS, $55.00 per 1000.
(Outside mist propagated.)
H. C. WAUGH
R. R. 1 Gallipolis, O.

GROUND COVERS

VINCA MINOR	Per 1000
1 to 3 leads	$ 7.50
3 to 5 leads	10.00
Made up clumps, 5 to 10 leads	35.00
Made up clumps, 10 to 20 leads	50.00

LONICERA HALLIANA (Hall's Honeysuckle)

Made up clumps, 2 to 5 leads	20.00
Made up clumps, 5 to 8 leads	30.00

O. H. PERRY NURSERY CO.
Box 545 McMinnville, Tenn.

VINCA MINOR (HARDY MYRTLE)

	Per 100	Per 1000
Division liners	$1.00	$ 8.00
Medium crowns	3.50	30.00
Heavy crowns	5.00	45.00
Clumps, 10 to 20 leads	5.00	45.00
Clumps, 20 to 30 leads	7.50	60.00

Shipment any time. Write for catalog.
LOWELL H. McGEE NURSERIES
P. O. Box 341 McMinnville, Tenn.
Phone 3351

ATTENTION, LANDSCAPERS!
AN EXCELLENT GROUND COVER

	100	1000
Euonymus f. coloratus		
2-yr., field-grown	$25.00	$225.00

Terms: Cash with order, 2 per cent discount and free packing. All others, 30 days net with suitable reference. 300 at 1000 rate.

MENTOR ROSE GROWERS, INC.
Little Mt. Rd. Mentor, O.

Hardy Myrtle (Vinca minor), plants with 20 leads or more and good roots, $5.00 per 100, $45.00 per 1000. Cash. Samuel I. Minder, 305 Euclid Ave., Lancaster, Pa.

PACHYSANDRA TERMINALIS
Strong 1-yr., field-grown, $65.00 per 1000.
HILLCREST GREENHOUSES, Franklin, Pa.

HARDWOOD CUTTINGS

HARDWOOD CUTTINGS
We specialize in furnishing hardwood cuttings to the trade. Because it takes time to process them, we especially urge early reservation of needs. We make cuttings 7 ins. long.

EVERGREEN CUTTINGS
Juniper, Taxus and Arborvitae.
Hard Maples, collected and inspected; ranging in sizes from 5 to 6 ft., up to 14 to 16 ft. These are branched and well-rooted. We also have hard Maple liners.
Finished shrubs.
We specialize in Lonicera zabeli.
Write for prices and varieties.
SCOTCH GROVE NURSERY
Scotch Grove, Ia.

HARDY PLANTS

SNYDER'S
PERENNIAL SPECIALTIES
Strong, blooming-size plants from open field beds, started early this spring unless otherwise described.
Priced per 100; 25 at the 100 rate.
AQUILEGIAS (Columbine)

Blue shades	$4.00
Crimson Star, red, white center, 2-yr.	8.00
Mrs. Nichols, blue, white center, 2-yr.	8.00
Orange and Scarlet, lighter centers	4.00
Rocky Mountain Blue, white centers	4.00
Rose Queen, pink shades, white centers.	4.00
Scott Elliott Hybrids, all colors	4.00
Achillea filipendulina, yellow	$4.00
Alyssum saxatile, golden yellow	4.00
Anemone pulsatilla, lilac, heavy plants	5.00
Arabis alpina Snowcap	4.00
Aster alpinus, dwarf blue, spring	5.00
Baptisia australis, deep blue	4.00
Centaurea Montana, blue Cornflower	4.00

CAMPANULAS

Carpatica alba, white, strong plants	$4.00
Carpatica Blue, true stock, heavy	4.00
Carpatica Dwf. Hyb., low, compact	4.00
Rotundifolia (Bluebells of Scotland)	5.00

CARNATION GRENADIN
Finest seed, practically all double.
Thinly sown, bushy plants, colors below. $4.00

Golden Sun	Scarlet
Rose Queen	White
Dark Red	Mixed

DELPHINIUMS

Belladonna Improved, light blue	$3.00
Bellamosum Improved, dark blue	3.00
Blackmore & Langdon Hyb., all colors	6.00
Chinense alba, white, about 30 ins. tall	3.00
Chinense Blue Butterfly, dwarf, 2-yr.	5.00
Sapphire, larger flowers, rich blue	5.00
Wrexham Hyb., tall, stately spires	6.00

DIANTHUS
Thinly sown, bushy plants.

Allwoodi, rich colors, very free	$4.00
Deltoides erecta, dwarf, all red	4.00
Little Jock Hyb., dwarf, compact	4.00
Plumarius Highland Hyb., single, mixed	4.00
Plumarius Spring Beauty, July-sown	4.00

EUONYMUS VEGETUS
(Evergreen Bittersweet).
Trouble-free and permanent. Clean, heavily rooted, easy to transplant.

Thick stemmed, from field rows, 8 to 10 ins.	27c each
Heavy plants, 2 yrs. in field rows, 6 to 8 ins.	18c each
Bushy transplants, 2 yrs. in open beds	12c each

(Continued in next column)

(Continued from previous column)

Rooted cuttings, heavy, 1 yr. in open beds	8c each
Digitalis Excelsior (Foxglove), mix.	$4.00
Euphorbia corollata, white filler	4.00
Geum Lady Stratheden, double yellow	4.00
Geum Mrs. Bradshaw, double red	4.00

GAILLARDIAS

Aurea pura, yellow, 4 to 5-in. flowers	$4.00
Burgundy, wine-red, 70 per cent true	4.00
Goblin, dwarf, red and yellow	4.00
Monarch Strain, all colors	4.00

GYPSOPHILA (Babys Breath).

Double Snow White, mostly double	$4.00
Pacifica, airy, pink-tinted flowers	5.00
Repens rosea, pink trailer, dwarf	4.00

IBERIS (hardy Evergreen Candytuft).
All will bloom well next spring.

Sempervirens, heavy, well branched	$4.00
Purity, large, dazzling white flowers, dwarfer, more compact and lighter green than Snowflake.	
1-yr. transplants from field beds	10.00
1-yr. transplants from field rows	12.00
Snowflake, flower same as Purity, larger plant, foliage larger and deeper green.	
1-yr. transplants from open field beds.	12.00
Helianthemum mutabile (Rock Rose), evergreen foliage, pink blooms	$5.00
Inula Golden Beauty, 18 ins., yellow	5.00
Lavandula Munstead's Dwarf, more compact, earlier, brighter flowers	5.00
Linum collinum, blue, dwarfer	4.00
Linum flavum comp., yellow, dwarf	4.00
Lychnis chalcedonica, bright red	4.00
Lythrum roseum, pink shades	4.00
Nepeta mussini, dwarf, lav.-blue.	4.00
Oenothera missouriensis, dwarf yellow	5.00

LIATRIS

All "bulbs" will bloom well this next season.	
Pycnostachya, tall purple spikes	$5.00
Scariosa August Glory, largest blooms, most striking buds	5.00
Scariosa September Glory, deeper color, red-tipped buds	5.00
Scariosa alba, white, September flwg.	4.00
Spicata, dwarf, July blooming	4.00

PHLOX SUBULATA.

Bushy plants from beds started last summer.	
Admiration, bright pink	$8.00
Alexander's Pink, rose, crimson eye	8.00
Crimson, a lighter red	8.00
Alexander's Surprise, salmon-rose, large flowers. Upright style	8.00
Alexander's White Cushion, beautiful white, neat mounds	8.00
Alexander's White Delight, best of all whites, large flowers	10.00

PLATYCODONS (Balloon-Flower).

Double Blue, large flowers, 2-yr.	$6.00
Double Pink Hybrids, 2-yr., mostly dbl.	6.00
Double White, large, pure white, 1-yr.	4.00
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POLYANTHUS (Primula veris hybrids).
Stocky plants, April-sown.

Choice Mix, all colors, giant flowers	$5.00
Giant Bouquet, mixed, top rating strain	6.00
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Giant White, large, vigorous grower	5.00
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1-year bed-grown plants	$8.00

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Stocky plants from finest seeds.

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(Agrostemma coronaria atrosanguinea.)

Deep red flowers, silvery foliage, 2 ft.	$4.00
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Scabiosa House's Hyb., heavy plants	7.00
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Sidalcea hybrids, pink and red shades	4.00
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Thinly sown, August 1956.

Arkwright Ruby, ruby red, deeper ctr.	$3.00
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White Perfection, large, pure white	3.00

Cash with order, please.
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$10.00 per 100, $75.00 per 1000.
Ostrich, Clayton, Lady, Sensitive and Maidenhair. Descriptive circular on request.
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2-yr.-old plants suitable for immediate resale or landscape work.

Anchusa myosotidiflora	$15.00 per 100
Arabis Snowcap	10.00 per 100
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Delphinium Blackmore & Langdon	10.00 per 100
Delphinium Wrexham Strain	10.00 per 100
Gypsophila pacifica, pink	10.00 per 100
Helianthemum (Sun Rose)	10.00 per 100
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Lavandula vera	12.00 per 100
Lathyrus (Sweet Pea), red	10.00 per 100
Lathyrus (Sweet Pea), pink	10.00 per 100
Lathyrus (Sweet Pea), white	10.00 per 100
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	Per 100	Per 1000
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Iberis sempervirens, white	3.00	25.00
Alyssum saxatile	2.50	20.00
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Foxglove Shirley Hyb., mixed	2.50	20.00
Cheiranthus, orange Wallflower	2.50	20.00
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Feverfew, double white	2.25	18.00
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Aquilegias, separate colors: Arabis, Artemisias, Aubrietas, Campanulas, Carnations, Chives, Delphinium Pacific Hybrids, 10 separate colors; Dianthus, Dicentras, Digitalis, Doronicums, Gaillardias, English Lavender, Liatris, Russell Lupines, Myosotis, Phlox subulata, 15 varieties; Primroses, Pyrethrums (Daisies), Shasta Daisy Esther Read, Sedums, 10 varieties; Sweet Williams, Thymes, Trollius, Violas and Violets.

If you haven't received our list, send for it now. 100 more good varieties.

All plants freshly dug for each order.
Orders taken now for fall delivery.
Shipping now.
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1 acre Russell hybrid Lupines, mixed; in 20-in. rows, thinned to 6 ins. and grown with irrigation. Plants are extra strong and well-bushed. $7.50 per 100, $70.00 per 1000.

Strong, May transplanted plants, bushy, ready for garden planting: Sweet Williams, tall, mixed colors, $8.00 per 100. Dwarf, mixed doubles and single, $8.00 per 100. Newport Pink, $8.00 per 100. Mixed reds with red foliage, $8.00 per 100.

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Strong, transplanted, field-grown in clay loam. Free from crown rot.

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25 at 100 rate; 200 at 1000 rate.
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Our own grown.
3-yr. transplants,
$50.00 per 100.
$450.00 per 1000.
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5 to 8-eye	40.00 per 100

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Green leaf.
3 yrs. old, in 6-in. tapered tins, staked and well branched.
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Less than 25, $2.75 each.
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Ilex opaca, named varieties.
3-in. pots, 3 to 5 ins., $45.00 per 100.
1 gal. plantainer, 8 to 14 ins., $1.25.
No shipping.

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WHOLESALE SUPPLIERS
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2 and 3-yr.-old,
90c, in lots of 100.
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Lonicera japonica halliana, extra-heavy No. 1, 3 and 4-yr., 18 to 24-in. field plants. 3, 4 to 6 leads, $40.00 per 1000; lighter grade, $30.00 per 1000; sample 100, $4.00. Experienced labor for grading and packing quantity orders. Immediate shipment. No order too large. Phone: 500W5.
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Our super quality, large-leaved strain.
Approved landscape architects' standards.
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Ready for immediate shipment.
Strong 1-yr. rooted cuttings, $45.00 per 1000.
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Hardiest Ivy. Fine for wall or ground cover. True stock. Well-rooted plants. Delivery now or later. 25 per cent down to reserve. Flat transplants, 8 to 12 ins., $12.00 per 100. 2½-in. pots, $20.00 per 100.
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STRONG, WELL-ROOTED 2¼-IN. PLANTS.
$100.00 per 1000.
IMMEDIATE DELIVERY.
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ENGLISH IVY (HEDERA HELIX)

8 to 12 ins., $50.00 per 1000.
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Upper River Road Gallipolis, O.

LINING-OUT STOCK

POTTED LINERS

	Per 100
Ardisia crenulata	$20.00
Ilex cornuta burfordi, 6 to 8 ins.	12.50
8 to 12 ins.	15.00
Ilex crenata helleri, 6 to 8 ins.	17.50
Ilex opaca East Palataka, 8 to 12 ins.	20.00
Ilex opaca femina, 8 to 12 ins.	20.00
Juniperus glauca hetzi, 8 to 12 ins.	17.50
Magnolia fuscata, 3-in. pots, 8 to 12 ins.	15.00
Osmanthus fortunei, 8 to 12 ins.	15.00
12 to 18 ins.	17.50
Osmanthus fragrans, 8 to 12 ins.	15.00
Pyracanthas, early red; 8 to 12 ins.	17.50
Pyracantha graberi, 8 to 12 ins.	17.50
Pyracantha lalandi, 8 to 12 ins.	17.50

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4000 Japonica Lane Mobile, Ala.

LINING-OUT STOCK
IMMEDIATE DELIVERY

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Arborvitae, boothi, 6 to 8 ins., X.	23.50
8 to 10 ins., X.	28.50
Arb., douglasi aurea, 8 to 10 ins., X.	28.50
Arborvitae, nigra, 6 to 8 ins., X.	23.50
8 to 10 ins., X.	28.50
Berberis julianae, 6 to 8 ins., X.	24.00
8 to 10 ins., X.	32.50
Concolor Fir, 4 to 6 ins., X.	17.50
6 to 8 ins., X.	22.50
Heather (purple), 2-yr., T.	23.50
Ilex convexa bullata, 8 to 10 ins., X.	22.50
Ilex microphylla, 6 to 8 ins., X.	22.50
8 to 10 ins., X.	27.50
Ilex rotundifolia, 6 to 8 ins., X.	22.50
8 to 10 ins., X.	27.50
Leucothoe catesbaei, 2-yr., T.	28.50
1-yr. trays, 4 to 6 ins., X.	20.00
Lucidum (upright), 8 to 10 ins., X.	25.00
Osmanthus aquifolium, 8 to 10 ins., X.	25.00
Retinospora Goldust, 14 to 16 ins., X.	28.50
Retinospora juniperoides, 6 to 8 ins., X.	23.50
Retinospora lutescens, 8 to 10 ins., X.	23.50
10 to 12 ins., X.	27.50
Retinospora obtusa crippsi, 6 to 8 ins., X.	22.50
Taxus cuspidata, 6 to 8 ins., X.	23.50
8 to 10 ins., X.	28.50
Taxus, Jeffrey's, 6 to 8 ins., X.	23.50
8 to 10 ins., X.	28.50
Taxus hatfieldi, 6 to 8 ins., X.	23.50
8 to 10 ins., X.	28.50
Taxus, Halloran, 6 to 8 ins., X.	23.50
8 to 10 ins., X.	28.50

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GOLDEN GOOSE LINERS

For immediate delivery or for reservation. All quotations are for beautiful lining-out stock from 2¼-in. pots, grown in open beds, under field conditions and ready for field planting.

	Per 100
Ilex cornuta burfordi, 10 to 12 ins.	$12.00
Ilex cornuta femina, 6 to 8 ins.	10.00
Ilex cornuta femina, 10 to 12 ins.	13.00
Ilex crenata rotundifolia, 6 to 8 ins.	10.00
Ilex crenata rotundifolia, 10 to 12 ins.	12.00
Ilex crenata bullata, 4 to 6 ins.	10.00
Ilex crenata bullata, 8 to 10 ins.	12.00
Ilex crenata microphylla, 4 to 6 ins.	12.00
Ilex opaca howardi (Improved American Holly), 8 to 10 ins.	16.00
Photinia serrulata, 8 to 10 ins.	12.00
Euonymus radicans, 8 to 10 ins	8.00
Ligustrum lucidum (Griffing Black), 8 to 10 ins.	10.00
Ligustrum lucidum repandens, 8 to 10 ins.	10.00
Ilex opaca femina (American Holly), 6 to 8 ins.	25.00
Ilex opaca East Palatka, 6 to 10 ins.	15.00

Our Hollies are grown from either cuttings or grafts, from well-berried specimens, insuring berries for you. This stock guaranteed 100 per cent satisfactory or return for full refund.

TERMS: Packing without cost. 25 per cent with order, balance C.O.D. Minimum 50 of a kind, please.
EVERGREEN NURSERIES
Poplar Pike
Germantown, Tenn.

EVERGREENS

Blue Hetz Juniper, 6 to 8 ins. bare-root	$0.07
Pfitzer Juniper, 6 to 8-in. bands	.14½
Spreading Jap. Yew, 6 to 8-in. bands	.20
Andorra Juniper, 6 to 8-in., bare-root	.06
Von Ehron Juniper, 6 to 10-in., bare-root	.06
Burk's Juniper, 6 to 10 ins., bare-root	.14

DECIDUOUS, BARE-ROOT

Blue Spiraea (Caryopteris), 8 to 12 ins.	.03½
Buddleia, best blue, 6 to 10 ins.	.06
Buddleia, best red, 6 to 10 ins.	.06
Buddleia Snowbank, 6 to 10 ins.	.06
Chinese Beauty-Berry (Callicarpa dichotoma), 6 to 10-ins.	.03½
Chinese Privet, 6 to 10 ins.	.03½
Regels' Privet, 6 to 10 ins.	.03½
Forsythia Lynwood Gold, 6 to 10 ins.	.06
Forsythia Spring Glory, 6 to 10 ins.	.04
Forsythia Arnold's Giant (new dwarf), 4 to 5 ins.	.10
Hypericum Hidcote, 4 to 6 ins.	.08
Weigela Eva Rathke, 4 to 6 ins.	.06

BROADLEAFS

Euonymus coloratus, 8 to 10 ins.	.03½
Euonymus patens, small, large or medium leaf, 6 to 10 ins.	.04
Texas (purple-leaf) Honeysuckle vine, 6 to 8 ins.	.05
Variegated leaf Honeysuckle vine, 4 to 6 ins.	.06

Less than 300 total order, add 2c per plant.
McININCH GREENHOUSES
St. Joseph, Mo.

POTTED LINERS, 2¼-IN.

Pfitzer Juniper, 6 to 10 ins.	$0.15
Ilex burfordi, 6 to 10 ins.	.13
Ilex rotundifolia, 5 to 8 ins.	.12
Nandinas, 5 to 8 ins.	.10

ROOTED CUTTINGS
From open sand beds.

Pfitzer Juniper, 6 to 10 ins.	.07
Ilex burfordi, 4 to 6 ins.	.04
Ilex rotundifolia, 4 to 6 ins.	.04

5 per cent discount on deliveries before December 31, 1956.
J. G. TSCHINKEL
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LINING-OUT STOCK—*Continued*

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Per 100	6 to 8 ins.	8 to 10	10 to 15
Cedrus deodara	$10.00	$12.50	....
Gardenia Mystery	....	10.00	....
Gardenia radicans	....	10.00	....
Gardenia stricta nana	....	10.00	$12.50
Ilex cornuta burfordi	10.00	12.50	15.00
2-yr., heavy, $20.00 per 100.			
Ilex crenata bullata	12.50	15.00	17.50
2-yr., heavy, $25.00 per 100.			
Ilex crenata macrophylla	12.50	15.00	17.50
2-yr., heavy, $25.00 per 100.			
Ilex crenata rotundifolia	10.00	12.50	15.00
2-yr., heavy, $20.00 per 100.			
Ilex opaca East Palatka	....	17.50	20.00
Ilex opaca femina	....	17.50	20.00
Juniperus glauca hetzi	....	17.50	....
Ligustrum luc. compactum	....	10.00	15.00
Magnolia grandiflora	....	15.00	....
Nandina domestica	10.00	15.00	....
4 to 6 ins., $8.50 per 100.			
Pyracanthas, early red	....	....	15.00
Pyracantha graberi	....	....	15.00

We also have excellent potted liners of many items. See our separate listing on these in this issue. Wholesale catalog furnished free upon request.

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Ilex aquifolium, male	$30.00
Ilex aquifolium, female	30.00
Ilex hetzi	15.00
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Azalea mollis	20.00
Ilex hetzi	20.00
Ilex convexa	20.00
Ilex rotundifolia	20.00
Pyracantha lalandi	20.00
Rhododendron hybr., S.	25.00
Taxus andersoni	15.00
Taxus browni	15.00
Taxus hicksi	15.00
Taxus nigra	15.00
Juniperus burki	35.00
3-YEAR BEDDED STOCK	
Azalea mollis	35.00
Azalea ponticum	35.00
Juniperus hetzi	25.00
Taxus cuspidata	25.00
Viburnum lantana, tr. br.	15.00
Acer palm. purp., 1-YR. SEED	10.00
Tree Peonies, 2-YR. SEED	60.00

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5323-5351 Wilson Mills Rd.
Cleveland 24, O.

LINING-OUT STOCK	100
Junipers, Andorra, 8 to 10 ins.,	
2-yr., transplants	$25.00
Greek, 8 to 10 ins., 2-yr., trans.	25.00
hetzi glauca, 6 to 8 ins., 2-yr., trans.	20.00
hetzi glauca, 8 to 10 ins., 2-yr., trans.	25.00
hetzi glauca, 10 to 12 ins., 3-yr., cut back, XX	35.00
Ilex bullata, 2-yr., heavy	25.00
Ilex bullata, 1-yr., X	15.00
Ilex crenata, 3-yr., 10 to 15 ins., XX	35.00
Ilex crenata, 1-yr., 6 to 8 ins., X	15.00
Ilex crenata rotundifolia, 1-yr., X	15.00
PICKUP AT NURSERY ONLY	
Leucothoe, 4-yr., XX, heavy	35.00
Leucothoe, 2-yr., flats, X	15.00
Pieris japonica, 4 to 6 ins., branched	20.00
Pieris japonica, 6 to 8 ins., branched	25.00
Pieris jap., 8 to 10 ins., branched, XX	35.00

Azaleas, hinodegiri, Hino-Crimson, Snow, 6 to 10 ins., 3-yr., XX, bed-run, $65.00 per 100, $600.00 per 1000.

Cash with order please.
SANDY LYNNE NURSERY
462 Ave. A, Box 84 Horsham, Pa.

LINING-OUT STOCK	Per 100	Per 1000
Taxus capitata, 1-yr., S.	$ 5.00	$40.00
transplants, 1-yr., S.	6.00	50.00
2-yr., S.	10.00	90.00
Pot-grown grafts, shipping now.	Per 100	
Acer polymorphum atropurpureum	$75.00	
Betula laciniata (Cutleaf Birch)	60.00	
Carpinus betulus fastigiata	60.00	
Cornus florida rubra	50.00	
Cornus florida rubra Prosser	65.00	
Cornus florida welchi var.	65.00	
Hamamelis mollis	50.00	
Pinus cembroides	60.00	
Retinospora obtusa gracilis	50.00	
Viburnum carlesi	50.00	
Viburnum juddi	50.00	
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New catalog of ornamentals. Abelias to Viburnums, now ready. Seeds, seedlings, rooted cuttings, grafts from greenhouse, frames, beds and fields; potted, bare-root and B&B. We are one of the oldest lining-out specialists in this country and are managed by 4th and 5th generation nurserymen. Our experience is your gain. Send for free copy today or visit us if you can.

JOHN VERMEULEN & SON, INC.
Woodfern Rd. Neshanic Station, N. J.

LINING-OUT STOCK	100
Taxus fastigiata, upright	$20.00
Taxus cuspidata, spreading	16.00

From 2¼-in. rose pots. Will average 6 ins. high.
HILLCREST GREENHOUSES, Franklin, Pa.

HEAVY LINERS FROM FIELD BEDS.

	Per 100
Taxus capitata, 4-yr., TT, 12 to 15 ins.	$65.00
Taxus cuspidata, 4-yr., TT, 12 to 15 ins.	60.00
Taxus capitata, 3-yr., TT, 10 to 12 ins.	55.00
Taxus cuspidata, 3-yr., TT, 10 to 12 ins.	45.00
Taxus browni, 3-yr., TT, 10 to 12 ins.	50.00
Taxus ovata, 3-yr., TT, 10 to 12 ins.	45.00
Taxus hicksi, 3-yr., TT, 10 to 12 ins.	40.00
Euonymus vegetus, 3-yr., branched	35.00
Euonymus vegetus, 2-yr., branched	25.00
Euonymus patens, 2-yr., T, 8 to 12 ins.	18.00
Alpine Currant, 3-yr., T, 12 to 18 ins.	25.00
Rhodotypos kerrioides, 2-yr., T, 8 to 12	15.00

FRED P. STROHL'S NURSERY
5204 St. Joe Rd. Fort Wayne, Ind.

LINING-OUT STOCK
From open beds and the field.

Pfitzer Juniper, 4 to 6 ins.		$0.06
2-yr., field, 8 to 10 ins.		.18
Pfitzer Juniper, 2¼-in. pots, 2-yr.		.18
Ilex burfordi, rooted cuttings		.04
Ilex rotundifolia, rooted cuttings		.04
Nandinas, 2¼-in. pots, 4 to 6 ins.		.12
seedlings, 4 to 6 ins.		.04
seeds (November 1 and after), per lb.		1.00
Euonymus patens, rooted cuttings		.03
1-yr., field liners, 5 to 7 ins.		.05
2-yr., field, 6 to 10 ins.		.07
Abelia grandifl., 1-yr., field liners		.05

E. F. DuBOSE, HUNTSVILLE, ALA.

LINING-OUT STOCK

	Each, 100	1000
Ilex convexa, 6 to 8 ins.	$0.30	$0.25
Ilex hetzi, 8 to 12 ins.	.40	.35
Ilex rotundifolia, 6 to 8 ins.	.30	.25
Ilex rotundifolia, 8 to 12 ins.	.40	.35

Grown 2 years in beds, planted 8 ins. apart. The larger size makes ideal plants for gallon cans and direct salesyard sales.

Pieris japonica, 6 to 9 ins. $0.30 $0.25
GERARD K. KLYN, INC., MENTOR, O.
Wholesale Rose Growers and Nurserymen

FIELD-GROWN HEAVY LINERS

Euonymus alatus compactus, 3-yr., TT, well-branched, 9 to 15 ins.	40c
Juniperus pfitzeriana, 3-yr., TT, good caliper and root system, 12 to 18 ins.	40c
Juniperus pfitzeriana compacta, 3-yr., TT, excellent type, 10 to 15 ins.	40c
Juniperus armstrongi, 3-yr., TT, popular dwarf Pfitzer, 8 to 10 ins.	45c

Immediate shipment for October planting.
HILL PARK NURSERY, Center Point, Ind.

LINING-OUT STOCK

We have a very fine selection of potted Evergreens, seedlings and rooted cuttings. All newest and best varieties. Write for our catalog.

BAIER LUSTGARTEN NURSERIES
Jericho Turnpike, Middle Island, L. I., N. Y.
Phone YAphank 4-3444

LINING-OUT STOCK

	Per 1000
Rhus cotinus, 12 to 18 ins.	$150.00

THE SHENANDOAH NURSERIES
Shenandoah, Ia.

PACHYSANDRAS

PACHYSANDRAS

Out of 2-in. pots, $12.00 per 100, $100.00 per 1000. F.O.B. Elizabeth, N. J.

DELAWARE VALLEY NURSERY
948 N. Broad St. Elizabeth, N. J.

PANSIES

OUTDOOR-GROWN PANSY PLANTS

	Per 1000
Swiss Giants, super mixed	$5.00
Jumbo, super mixed	6.00
Maple Leaf Giants, mixed	5.00
Amsterdam Giants, mixed, large blooms	6.00
Donovan's dwarf mixed	5.00
Coronation Gold, golden yellow	6.00
Laura, raspberry-rose	6.00

Cash or C.O.D.
DUTCH PANSY GROWERS
P. O. Box 408 Kalamazoo, Mich.

9,500 Active Nurserymen are in need of stock. List your offerings in the American Nurseryman Classified Section.

PEONIES

PEONIES

We have grown Peonies for 30 years and have selected, good cut-flower varieties, true to name and rogued. We are offering them in clumps that will divide to 5 or more standard plants.

Variety and color	Per clump
Edulis superba, early deep pink	$1.00
Duchesse d'Orleans, late deep pink	.75
Henri Murger, deep pink	.75
Mons. Jules Elie, shell-pink	1.50
Modeste Guerin, deep pink	1.00
Marquis C. Lagergren, late red	1.00
Festiva Maxima, early large white	1.00
Grover Cleveland, late dark crimson	1.25

ROUDEBUSH GARDENS
4331 Needmore Rd. Dayton 4, O.

Peony edulis superba, large, early pink; large 3 to 5-eye divisions, from 3-yr.-old block, $30.00 per 100. F.O.B. here.
Gilbertson Nursery, Kindred, N. D.

PEONIES

Strong 3 to 5-eye divisions from young plants. Immediate delivery. Packing free for cash with order, otherwise at cost.

	10	100	1000
Baroness Schroeder, flesh-pink	$4.00	$35	$350
Canari, sulphur-white	4.00	35	325
Duch. de Nemours, ivory-white	5.00	40	375
Duch. d'Orleans, soft pink	3.00	25	225
Duc de Wellington, pure white	3.50	30	....
Edulis superba, deep pink	3.00	25	225
Felix Crousse, ruby-red	4.00	35	350
Festiva maxima, white	5.00	38	350
Francois Ortega+, crimson	4.00	30	275
Karl Rosefield, dark crimson	5.00	40	375
Lillian Wild, flesh to white	6.00	40	400
Marie Jacquin, semi-dbl. white	5.00	45	450
Mary Brand, crimson	7.00	60	....
Mme. de Verneville, white	4.00	35	325
Modeste Guerin, deep carmine-pink	5.00	40	375
Mons. Jules Elie, pink	5.00	40	375
Officinalis rubra, early red	6.00	50	....
Ozark Beauty, late deep pink	5.00	40	375
Queen Emma, silvery pink	4.00	30	275
Queen Victoria, white	3.50	30	275
Sarah Bernhardt, light pink	4.00	35	350
Venus, hydrangea-pink	4.00	35	....
Mixed Peonies, grown mixed	2.50	20	200
Pink Peonies, not named	2.75	25	250
White Peonies, not named	2.75	25	250
Red Peonies, not named	2.75	25	250

JAPANESE PEONIES

	10	100
Dr. Jekyll, dark red	$7.50	$60
Neon, rose-pink	7.50	60
Nippon Splendor, tall dark red	6.00	50
Prairie Afire, pink guards, red petaloides	7.50	60

PEONY LINERS

2 to 3-eye divisions, 25 per cent off the 3 to 5-eye price; 1 to 2-eye divisions, 50 per cent off the 3 to 5-eye price.

5 of a variety at 10 rate; 25 of a variety at 100 rate; 250 of a variety at the 1000 rate.

We grow many additional varieties of Peonies. Send us a list of your additional requirements for quotation. Iris and Day Lily list on request.

SARCOXIE NURSERIES PEONY FIELDS
Wild Bros. Nursery Co.
Phone 43 Sarcoxie, Mo.

PEONIES

Whole 1-yr. field clumps, not divided; at least 3 eyes, in the following varieties. $35.00 per 100, $325.00 per 1000.

Festiva maxima	Mons. Jules Elie
Baroness Schroeder	Duchesse de Nemours
Sarah Bernhardt	Albert Crousse
Karl Rosefield	Reine Hortense
Marie Lemoine	Adolph Rousseau
Lady Alex. Duff	Felix Crousse
Gen. McMahon	Edulis superba

VERKADE'S NURSERIES, Wayne, N. J.

Start Your Offer Now in the American Nurseryman And Watch Sales Climb.

PHLOX

HARDY PHLOX

Write for our new list of 1-yr., field-grown Phlox ready for shipment now.

PHLOX SUBULATA (Creeping Phlox)

Our new crop of field-grown clumps looks exceptionally well this year. Ask for our listing of 18 popular varieties, at $12.00 per 100, $100.00 per 1000.

WALTERS GARDENS
Route 2 Zeeland, Mich.

RHODODENDRONS

RHODODENDRONS

For immediate shipment. Unnamed hybrids of hardy ponticum-catawbiense parentage. Good foliage. For understock, growing on or over the counter sales, with firm lightweight ball, twice transplanted, bed-grown.

4 to 6 ins.	$0.20 each
6 to 8 ins.	.25 each
8 to 12 ins.	.30 each

50 plants per crate. Order by crate only. Lightweight, expert frost-proofed crating free. Cash with order.

RICHARD P. RESSEL NURSERY
Mulino, Ore.

HYBRID RHODODENDRONS

Var. America (red), Roseum elegans (rose-purple). Field-grown in open sun. Bushy plants.

	EACH, 10 rate	100 rate
15 to 18 ins.	$5.00	$4.50
18 to 21 ins.	7.00	6.50
2 to 2½ ft.	8.50	8.00

Cash and carry.
SPRINGFIELD NURSERY
492 Mountain Ave. Springfield, N. J.

20,000 hybrid Rhododendrons, 12 to 18 ins., B&B, 70 varieties, $1.95 and $2.75 per 100; 50,000 rooted cuttings, 200 varieties, 50c each. 150,000 Azaleas, any size and variety; also Evergreens.

Kordus Nursery, Deer Park Ave., R. D. 4, Box 152, Huntington, L. I., N. Y.

HYBRID RHODODENDRONS
Landscape sizes.
Different colors.
PARMENTIER'S ROSES
Grady St. Bayport, L. I., N. Y.
Phone Bayport 8-0811

RHODODENDRON MAXIMUM
Nursery-grown and collected. 2 to 7 ft. high. Well-shaped, symmetrical plants.
CURTIS NURSERIES, INC.
Callicoon, N. Y.

ROSEBUSHES

ROSEBUSHES
2-YEAR PLANTS.
Grown, graded and packed to perfection. 246 varieties and 12 different types to choose from.

WRITE TODAY FOR PRICES
AND BOOK YOUR REQUIREMENTS NOW!
ROSEMONT NURSERIES

D. L. Thompson, Owner
Dept. AN
Tyler, Tex.

ROSEBUSHES, FREE FROM DISEASE
Write for price on quality 2-yr.-old, field-grown bushes for fall 1956 and spring 1957 delivery. Standard bush and climbing.
LIVE DELIVERY, HEAVY GRADING.
BARE-ROOT OR PACKAGED.
Prepaid delivery. Reasonable prices.
We are equipped to handle your order for one or one hundred thousand bushes.
ROSELAWN NURSERIES
Box 295 Winnsboro, Tex.

THE SEASON'S BEST DEAL!
SEE FOR YOURSELF
BY
SENDING FOR 1956-57 TRADE LIST.
WE STILL OFFER A CHOICE OF
BARE-ROOT AND PREPACKAGED
PATENT AND STANDARD ROSES.
NEW LONDON ROSES
"The ROSE Nursery"
P. O. Box 876 Overton, Tex.

ROSEBUSHES
A WIDE ASORTMENT OF REASONABLY PRICED, HIGH-QUALITY ROSEBUSHES, WITH FAST, COURTEOUS SERVICE, IS WHAT YOU GET AT
MARTIN'S ROSE NURSERY
P. O. Box 155 Arp, Tex.
Phone UL-92191.
(A copy of our 1956-57 trade list will be mailed to you upon request.)

FIELD-GROWN ROSEBUSHES
FINEST QUALITY
Hybrid Teas, Floribundas,
Polyanthas and Climbers.
Price and variety list on request.
WELLS BROS. NURSERY
Box 625 Lindale, Tex.

2-YEAR ROSEBUSHES, QUALITY PLANTS
70 varieties. Budded on multiflora. No. 1, $35.00; No. 1½, $27.00; No. 2, $20.00 per 100. Also 30 patented varieties. Send for list.
P. O. TATE NURSERY, R. 3, TYLER, TEX.

SEEDS

MULTIFLORA ROSE SEED
Thorny variety, 1956 crop.
1 to 5 lbs. ..... $3.75 per lb.
6 to 25 lbs. ..... 3.50 per lb.
26 to 50 lbs. ..... 3.20 per lb.
F.O.B. Yorkville, Ill.
Write for prices on larger amounts.
FARMLAND IMPROVEMENT CO.
Yorkville, Ill.
John C. Knight, Jr., Owner

QUERCUS PALUSTRIS
(Pin Oak)
New crop acorns, water-tested, high quality.
100 lbs. or more, 30c per lb.
F.O.B. Sumner, Mo.
Order now to insure delivery for fall planting.

C. D. WRIGHT, SUMNER, MO.

"Pure Ky." BLUEGRASS LAWN SEED
In the heart of the bluegrass country, we specialize in producing good seed.
Crop is short this year. Prices subject to change and unsold. 10 lbs., $9.00; 25 lbs., $19.00; 50 lbs., $38.50; 100 lbs., $75.00. F.O.B. here.
WALNUT LAWN FARM
Route 2 Lexington, Ky.

SHRUBS AND TREES

WHOLESALE PRICE LIST, FALL 1956
2-yr. bedded stock Each, per 100 per 1000
Ilex rotundifolia, 6 to 8 ins. ... $0.25 $0.20
Ilex rotundifolia, 8 to 12 ins. ... .30 .25
Unnamed Rhododendron hybrids of hardy ponticum. Well-branched catawbiense parentage. Good foliage with firm lightweight ball, twice transplanted, bed-grown. Japanese beetle certified.
Each, per 100 per 1000
6 to 8 ins. $0.30 $0.25
4 to 6 ins. ..... .25 .20
250 PLANTS AT 1000 RATE. Stock offered subject to prior sale. Free packing. F.O.B. Willoughby, O. Terms: 2 per cent for cash with order or by express C.O.D. shpiment.
LITTLE ACRES NURSERY
R. D. 2, Chardon Rd. Willoughby, O
Members of Lake County Nurserymen's Association

"FAMOUS ROOT" FLORETUM LINERS
Priced per 100; 25 at 100 rate.
Acers, campestra, 4 to 10 ins., $10.00; 12 to 18 ins., $15.00.
ginnala (flowering Maple), 6 to 12 ins., $4.00; 15 to 18 ins., $6.00; 2 to 3 ft., $15.00; 3 to 5 ft., $35.00.
negundo variegatum (Ash-leaved), 4 to 12 ins., $10.00.
pseudoplatanus (Sycamore), 4 to 10 ins., $6.00; atropurpureum, 4 to 10 ins., $10.00.
rubrum (Scarlet Maple), 4 to 12 ins., $6.00.
saccharum (Sugar or Hard Maple), Kansas-grown seed; 4 to 8 ins., $8.00; saccharum nigrum (Black Sugar Maple), 4 to 8 ins., $10.00.
Broussonetia papyrifera, 6 to 12 ins., $15.00.
Carpinus, tschonoski (yedoensis), 3 to 8 ins., $15.00.
caroliniana (Am. Hornbeam), 6 to 15 ins., $10.00.
Cornus florida (white Dogwood), 4 to 12 ins., $6.00.
Diospyros virginiana (Am. Persimmon), 6 to 12 ins., $6.00.
Elaeagnus umbellata (autumn Elaeagnus), 2 to 4 ins., $8.00.
Fraxinus, americana (White Ash), 3 to 12 ins., $4.00.
excelsior (European Ash), 6 to 12 ins., $6.00; 2 to 3 ft., $12.00; 3 to 5 ft., $25.00.
ornus (Flowering Ash), 1 to 2 ft., $12.00.
Ginkgo biloba, 4 to 6 ins., $12.00; 8 to 10 ins., $15.00.
Koelreuteria paniculata, 3 to 6 ins., $6.00.
Liquidambar styraciflua (Sweet Gum), 4 to 6 ins., $6.00.
Magnolia grandiflora, 2 to 4 ins., $12.00; 5 to 10 ins., $15.00.
Nyssa sylvatica, 3 to 6 ins., $8.00; 8 to 15 ins., $12.00.
Phellodendron amurense (Amur Cork Tree), 6 to 8 ins., $8.00; 10 to 18 ins., $10.00.
Oriental Flowering Cherries:
Prunus, serrulata, 6 to 12 ins., $8.00.
subhirtella (Higan), 6 to 10 ins., $8.00; 12 to 30 ins., $15.00.
subhirtella pendula (Weeping), 6 to 12 ins., $8.00; 12 to 18 ins., $10.00; 18 to 24 ins., $15.00; 2 to 3 ft., XX, $100.00; 3 to 4 ft., XX, $150.00.
yedoensis (Yoshino), 6 to 18 ins., $10.00.
Quercus, alba (White Oak), 6 to 10 ins., $6.00.
macrocarpa (Bur Oak), 6 to 10 ins., $15.00; olivaeformis (Northern type), 2 to 4 ins., $15.00.
palustris (colorful Pin Oak), 4 to 10 ins., $15.00.
Sapindus drummondi (hardy Chinaberry), 4 to 12 ins., $15.00.
mukorossi (grape cluster), 4 to 8 ins., $15.00.
Zelkova serrata (Japanese Zelkova), 3 to 12 ins., $15.00.
Carya ovata (shagbark Hickory), 2 to 4 ins., $10.00.
Carya (Pecan), soft shelled; native; 4 to 8 ins., $35.00.
Callicarpa dichotoma purpurea, 2 to 4 ins., $6.00.
Spiraea Anthony Waterer, 4 to 8 ins., $10.00.
Euonymus fortunei vegetus (hardy Evergreen), for shrub or hedge; 3 to 6 ins., $8.00.
Lonicera tatarica, X, 6 to 12 ins., $6.00.
Vitex agnuscastus, X, 8 to 24 ins., $8.00.
macrophylla (Pepper Tree), X, 8 to 24 ins., $8.00.
Wistaria macrobotrys, long clusters, fragrant purple flowers; 6 to 10 ins., 3-in. bands, $50.00.
PRAIRIE SOUTHWEST FLORETUM
Fall River, Kan.

RED-LEAVED BARBERRY
(Atropurpurea) 2-yr. seedlings.

	Per 100	Per 1000
Lining-out	$ 4.50	$ 40.00
6 to 9 ins., branched	6.00	50.00
9 to 12 ins., branched	9.00	80.00
12 to 18 ins., branched	12.00	110.00
18 to 24 ins., branched	16.00	140.00

GREEN BARBERRY
(Thunbergi) 2-yr. seedlings.

	Per 100	Per 1000
Lining-out	$ 3.00	$ 25.00
6 to 9 ins., branched	3.50	30.00
9 to 12 ins., branched	5.50	45.00
12 to 18 ins., branched	7.00	60.00
18 to 24 ins., branched	8.50	75.00

RED-LEAVED BARBERRY
(Atropurpurea) 4-yr. transplants.

Heavy stock.	Per 100	Per 1000
9 to 12 ins.	$24.00	$200.00
12 to 18 ins.	28.00	240.00
18 to 24 ins.	32.00	280.00
2 to 2½ ft.	36.00	320.00

GREEN BARBERRY
(Thunbergi) 4-yr. transplants.

Heavy stock.	Per 100	Per 1000
9 to 12 ins.	$20.00	$160.00
12 to 18 ins.	24.00	200.00
18 to 24 ins.	28.00	240.00
2 to 2½ ft.	32.00	280.00

Our Red Barberry is one of the finest strains in the U. S. A.
DANEGGER'S HI-WAY NURSERY
Box 336 Milford, Del.

ASSORTED, LARGE SHADE TREES
Moline Elm and soft Maples.
Stop by to see them.
MARQUETTE NURSERY
9909 S. Harlem Ave.
Oak Lawn, Ill.

POTTED GRAFTS, 1-YR.

	Per 100
Acer palmatum atropurpureum	$ 75.00
Fagus sylvatica asplenifolia	75.00
Fagus sylvatica pendula	75.00
Fagus sylvatica fastigiata	75.00
Fagus sylvatica riversi	75.00
Picea pungens moerheimi	125.00
Picea pungens kosteriana	125.00

ROOTED CUTTINGS, 1-YR. BEDDED

	Per 100	Per 1000
Buxus sempervirens, 4 to 6 ins.	$10.00	$ 90.00
Ilex bullata, 4 to 6 ins.	10.00	90.00
Ilex crenata, 5 to 8 ins.	10.00	90.00
Ilex rotundifolia, 5 to 8 ins.	12.00	100.00
Juniper, Andorra, 4 to 8 ins.	10.00	90.00
Juniper, hibernica, 5 to 8 ins.	10.00	....
Juniper, Hetz, 4 to 8 ins.	12.00	100.00
Juniper, Pfitzer, 4 to 6 ins.	12.00	100.00
Ilex glabra, 4 to 6 ins.	10.00	....
Pachysandra	4.00	35.00
Pyracantha lalandi, potted	15.00	....
Retinospora plumosa aurea, 6 to 8 ins.	10.00	90.00
Retinospora plumosa, 6 to 8 ins.	10.00	90.00
Taxus brevifolia, 4 to 6 ins.	10.00	90.00
Taxus browni, 4 to 6 ins.	12.00	100.00
Taxus capitata, tips, 6 to 8 ins.	15.00	....
Taxus compacta, 4 to 6 ins.	15.00	125.00
Taxus cuspidata, 4 to 6 ins.	10.00	90.00
Taxus hatfieldi, 4 to 6 ins.	10.00	90.00
Taxus hicksi, 4 to 6 ins.	10.00	90.00
Taxus ovata, 4 to 6 ins.	15.00	125.00
Taxus repandens, 4 to 6 ins.	12.00	....
Thuja globosa, 5 to 8 ins.	10.00	90.00
Thuja nigra, 5 to 8 ins.	10.00	90.00
Thuja vervaeneana, 5 to 8 ins.	10.00	....

1-YR. SEEDLINGS

	Per 100	Per 1000
Cornus florida	$5.00	$40.00
Chinese Chestnut	8.00	70.00
Taxus capitata	5.00	40.00
Taxus capitata, transplants	6.00	50.00

2-YR. SEEDLINGS

	Per 100	Per 1000
Acer palmatum	$6.00	$50.00
Balsam Fir, 3 to 5 ins.	4.00	35.00
Picea excelsa, 4 to 6 ins.	3.50	25.00
Picea pungens glauca, 3 to 5 ins.	4.00	35.00
Picea White Spruce, 4 to 6 ins.	3.50	25.00
Pinus strobus, 4 to 6 ins.	3.50	25.00
Pinus sylvestris, 4 to 6 ins.	3.50	25.00
Thuja occidentalis, 4 to 6 ins.	5.00	40.00
Thuja orientalis, 4 to 8 ins.	3.50	30.00
Tsuga canadensis, 3 to 4 ins.	6.00	50.00
Taxus capitata, 4 to 6 ins.	7.00	60.00
Ilex crenata, 4 to 6 ins.	5.00	40.00

3-YR. SEEDLINGS, TRANSPLANTED

	Per 100	Per 1000
Taxus capitata, 4 to 8 ins.	$12.00	$100.00
Pinus mugo Tyroleon	8.00	....
Tsuga canadensis, 4 to 7 ins.	8.00	70.00
Douglas Fir, 5 to 8 ins.	6.00	50.00
Euonymus alatus	6.00	45.00

AZALEAS, 3-YR. TRANSPLANTS

	Per 100
Hino-Crimson	$40.00
Hinodegiri	40.00

4-YR. TRANSPLANTS

	Per 100	Per 1000
Douglas Fir, 6 to 12 ins.	$10.00	....
Picea excelsa, 6 to 8 ins.	6.00	$ 50.00
Picea excelsa, 10 to 15 ins.	15.00	140.00
Picea pungens glauca, 4 to 8 ins.	7.00	60.00
Picea White Spruce, 6 to 8 ins.	6.00	50.00
Picea rubens, 6 to 8 ins.	12.00	....
Tsuga canadensis, 5 to 8 ins.	10.00	95.00
Tsuga canadensis, 8 to 10 ins.	15.00	140.00
Tsuga canadensis, 10 to 12 ins.	20.00	190.00
Tsuga caroliniana, 6 to 8 ins.	10.00	....

VAN DINE NURSERY
Berdan Ave. Preakness, Paterson, N. J.

SURPLUS SHRUB LIST
ALL STOCK MEETS A.A.N. STANDARDS

	Per 100
Azalea mollis, 15 to 18 ins., B&B	$175.00
Azalea mollis, 18 to 24 ins., B&B	225.00
Berberis atropurpurea, 15 to 18 ins.	25.00
Berberis atropurpurea, 18 to 24 ins.	30.00
Berberis mentorensis, 15 to 18 ins.	35.00
Berberis mentorensis, 18 to 24 ins.	37.50
Cydonia aurea, 18 to 24 ins.	40.00
Cotoneaster horizontalis	100.00
Cotoneaster divaricata, 18 to 24 ins., B&B	175.00
Daphne burkwoodi alba, 18 to 24 ins.	200.00
Deutzia gracilis, 15 to 18 ins.	40.00
Deutzia gracilis, 18 to 24 ins.	45.00
Euonymus alatus comp., 15 to 18 ins.	70.00
Euonymus alatus comp., 18 to 24 ins.	80.00
Euonymus patens, 15 to 18 ins.	60.00
Euonymus patens, 18 to 24 ins.	70.00
Euonymus rad. vegetus, 12 to 15 ins.	60.00
Euonymus rad. vegetus, 15 to 18 ins.	70.00
Forsythia Spring Glory, 2 to 3 ft.	30.00
Forsythia Spring Glory, 3 to 4 ft.	35.00
Hydrangea acuminata, 2-yr.	50.00
Koikwitzia, 2 to 3 ft.	55.00
Potentilla Snowflake	50.00
Pyracantha (Firethorn), 6-in. pots	90.00
Prunus glandulosa rosea, 2 to 3 ft.	70.00
Spiraea jap. coccinea, 18 to 24 ins.	45.00
Syringa henryi lutece (Lilac), 2 to 3 ft.	70.00
Syringa henryi lutece (Lilac), 3 to 4 ft.	80.00
Syringa microphylla superba, 2 to 3 ft.	90.00
Viburnum burkwoodi, 2 to 3 ft., B&B.	200.00
Viburnum burkwoodi, 2 to 3 ft., bare-root	150.00
Viburnum carlesi, 2 to 3 ft., doz.	40.00
Viburnum opulus nanum	50.00
Viburnum plicatum grand., 2 to 3 ft.,	85.00
Viburnum tomentosum, 2 to 3 ft.	60.00
Viburnum tomentosum, 3 to 4 ft.	70.00

SPECIAL PRICE ON QUANTITY LOTS.
SPRINGBROOK GARDENS, MENTOR, O.

SHRUBS and TREES—*Continued*

NATIVE EVERGREENS
FLOWERING SHRUBS
TREE SEEDLINGS AND VINES

We offer the following stock as dug, ungraded. This is intended for those that are interested in lining-out stock, however, there will be some heavy, well-balanced plants in this just as they come; nothing taken from them or nothing added. These prices are subject to change at any time. If interested, let us book your order now and ship when you are ready for it. We can make truck deliveries at very reasonable rates. 250 plants at 1000 rate. Terms: Cash or satisfactory reference.

	Per 100	Per 1000
ACER RUBRUM (Red Maple), 2 to 5 ft.	$ 6.00	$45.00
AZALEAS, native varieties, 12 to 24 ins.	5.00	35.00
BETULA NIGRA (River Birch), 18 to 30 ins.	3.00	25.00
CARPINUS CAROLINIANA (Hornbeam), 2 to 5 ft.	7.50	55.00
CERCIS CANADENSIS (Redbud), 2 to 5 ft.	6.00	50.00
FAGUS AMERICANA (American Beech), 18 to 36 ins.	4.00	30.00
FRAXINUS LANCEOLATA (Green Ash), 18 to 36 ins.	3.00	25.00
HYPERICUM DENSIFLORUM, 12 to 36 ins.	3.00	20.00
HYDRANGEA ARBORESCENS, smooth, 12 to 30 ins.	3.00	20.00
LIQUIDAMBAR (Sweet Gum), 3 to 6 ft.	10.00	80.00
LIRIODENDRON (Tulip Tree), 2 to 5 ft.	6.00	50.00
MAGNOLIA ACUMINATA (Cucumber Tree), 6 to 24 ins.	5.00	40.00
NYSSA SYLVATICA (Black Gum), 2 to 5 ft.	25.00	....
OSTRYA VIRGINIANA (Hop-Hornbeam), 2 to 5 ft.	10.00	90.00
OXYDENDRUM ARBOREUM (Sourwood), 12 to 30 ins.	7.50	60.00
QUERCUS PHELLOS (Willow Oak), 12 to 30 ins.	3.00	25.00
ILEX OPACA (American Holly), 4 to 12 ins.	3.00	25.00
PINUS ECHINATA (Shortleaf Pine), 12 to 24 ins.	2.50	20.00
JUNIPERUS VIRGINIANA (Red Cedar), 6 to 18 ins.	3.00	25.00
LONICERA HALLIANA (Hall's Honeysuckle), 8 to 18 ins.	2.25	18.00
VINCA MINOR (Myrtle vine), 4 to 12 ins.	2.00	17.50

O. H. PERRY NURSERY CO.
Box 545 McMinnville, Tenn.

1-YR. SPECIMEN PINK DOGWOOD
Budded on transplanted seedlings.

6 to 12 ins.	$0.40
12 to 18 ins.	.55
18 to 24 ins.	.65
24 to 30 ins.	.85
30 to 36 ins.	1.00
3 to 4 ft.	1.50

LINING-OUT STOCK

1-yr. flowering Peach and Purple-leaved Plum.
(Peppermint Stick, double red, pink, white and Newport Plum.)

6 to 12 ins.	$0.10
12 to 18 ins.	.15
18 to 24 ins.	.18
2 to 3 ft.	.20

NANDINA DOMESTICA LINERS

4 to 6 ins.	$0.08
6 to 8 ins.	.11

SILVER MAPLE LINERS

6 to 12 ins.	$0.02
12 to 18 ins.	.03
18 to 24 ins.	.04

Write for price list.

WAYNE'S ORNAMENTAL NURSERY
Winchester, Tenn.

PINK DOGWOOD
1, 2 and 3 yrs. old.
All sizes.
SUPER RED DOGWOOD
12 to 18 ins., 3 to 4 ft.
18 to 24 ins., 4 to 5 ft.
24 to 30 ins., 5 to 6 ft.
30 to 36 ins.
WHITE DOGWOOD
3 to 4 ft. 5 to 6 ft.
4 to 5 ft. 6 to 7 ft.
BROWN TURKEY FIG
12 to 18 ins. 18 to 24 ins.
2 to 3 ft.
EVERGREENS
SHADE TREES
FRUIT TREES
LET US QUOTE YOU OUR PRICES
IKE HAWKERSMITH NURSERY
Winchester, Tenn.

ACER DASYCARPUM
(Silver Maple)

		Per 100	Per 1000
50,000	6 to 10 ins., S.	$1.50	$8.00
15,000	12 to 18 ins., S.	2.25	15.00
5,000	12 to 18 ins., T.	3.00	25.00
5,000	18 to 24 ins., T.	3.25	....

4 to 6 ft., T, 35c each

ULMUS PUMILA (CHINESE ELM)

20,000	6 to 12 ins., S.	$1.00	$8.00
10,000	12 to 18 ins., S.	1.50	12.50

EDMOND L. BABCOCK
32 West Ave. Dansville, N. Y.

FALL 1956 AND SPRING 1957 DELIVERY

	100	1000
Alpine Currant, rooted cuttings (5000, $150.00)	$ 4.00	$ 35.00
Cornus elegans var. Rooted cuttings	10.00	80.00
Transplants	25.00	200.00
Hydrangea P. G., 2 to 3 ft.	35.00	....
Philadelphus aureus, 12 to 15 ins.	60.00	....
Philadelphus aureus, 15 to 18	75.00	....
Prunus cistena, 18 to 24 ins.	45.00	....
Prunus cistena, 2 to 3 ft.	60.00	....
Spiraea froebeli, 18 to 24 ins.	25.00	200.00
Lilium elegans, 4 to 5-in. cal.	8.00	75.00
Lilium elegans, 5 to 6-in. cal.	10.00	90.00
Gypsophila Bristol Fairy, No. 1	25.00	....

250 at 1000 rate. Cash or satisfactory references.
NEWLAND'S NURSERY, Lake City, Minn.

EVERGREENS, B&B
FOR FALL 1956
HEAVY SHEARED SPECIMENS
1500 Pfitzer Juniper,
15 to 18 ins., $2.50.
1½ to 2 ft., $3.25.
250 Blue Pfitzer Juniper,
1½ to 2 ft., $3.50.
150 ANDORRA JUNIPER, 1½ to 2 ft., $3.25.
5000 TAXUS CUSPIDATA, 12 to 15 ins., $3.50.
1000 Honeysuckle, zabelli, extra heavy,
2 to 3 ft., 60c; 3 to 4 ft., 70c.
400 Forsythia Spring Glory, extra heavy,
2 to 3 ft., 60c.
50 Moline Elm, 2-in., $9.00.
200 American Elm, 1¼ to 1½-in., $3.00.
Your inspection of this stock invited.
BIG ROCK NURSERY, BIG ROCK, ILL.
U. S. Route 30, 10 miles west of Aurora, Ill.

PIN OAK
NURSERY-GROWN

	B.R.	B&B
1½ to 2 ins.	$ 8.25	$14.85
2 to 2½ ins.	12.10	20.90
2½ to 3 ins.	16.50	30.25
3 to 3½ ins.	22.00	41.80
3½ to 4 ins.	29.70	57.20

RED OAK, SWEET GUM, WHITE DOGWOOD, PINE and SPRUCE, in larger sizes.
65 acres of choice landscape material in rare and unusual varieties. Priced individually according to value. No catalog; no shipping. Your inspection invited.
GEORGE F. BLOOMER NURSERIES
Rt. 69
Flemington, N. J.
Telephone 155

CORNUS FLORIDA

2-yr. seedlings, 8 to 12 ins.	$50.00 per 1000
2-yr. seedlings, 18 to 24 ins.	100.00 per 1000
3-yr. seedlings, 2 to 3 ft.	200.00 per 1000
3 to 4 ft., B.R.	$1.00 each
3 to 4 ft., B&B	1.50 each
4 to 5 ft., B.R.	2.00 each
4 to 5 ft., B&B	2.50 each
5 to 6 ft., B.R.	3.00 each
5 to 6 ft., B&B	3.50 each

CORNUS RUBRA
4 ft., B&B, $5.00; 5 ft., B&B, $6.50.
BAIER LUSTGARTEN NURSERIES
Jericho Turnpike, Middle Island, L. I., N. Y.
Phone YAphank 4-3444

LINING-OUT STOCK

	Per 100
Euonymus alatus, 8 to 10 ins.	$20.00
Euonymus alatus compactus, 8 to 10 ins.	20.00
Euonymus vegetus, 2-yr., bedded, 8 to 10 ins.	18.00
Spiraea Anthony Waterer, transplants, 6 to 8 ins.	15.00

List of other liners ready now.
JOHN BOS NURSERY, Clyde, O.

COLLECTED ACER
RUBRUM AND SACCHARINUM,
from whips to 4-in. caliper.
CURTIS NURSERIES, INC.
Callicoon, N. Y.

For $3.50

you can offer that surplus in a classified ad of 10 lines on these pages—quickly and easily turning stock into cash.

AT 35c PER LINE

you can keep a list of specialty items before trade buyers through the selling season at small cost.

Send your copy (count 6 average words to line) for the November 1 issue to reach us by October 12.

Forms for November 15 issue will close Friday, October 26.

AMERICAN NURSERYMAN
343 S. Dearborn St. CHICAGO 4, ILL.

LANDSCAPING
AND PLANT MART MATERIAL
Top-quality stock at fair prices, in quantity.
Spreading Yew, 12 to 15 ins. to 30 ins.
Hicks Yew, 15 to 18 ins. to 48 ins.
Capitata Yew, 24 to 60 ins.
Ilex bullata, 12 to 30 ins.
Ilex crenata, 24 to 48 ins.
Pieris japonica, 18 to 24 ins.
White Dogwood, 2½ to 5 ft.
Flowering shrubs, Pyracanthas, Azaleas, etc.
No shipping. Open every day.
HUBBS NURSERIES
Route 130 Riverton, N. J.

DOGWOOD, WHITE-FLOWERING, B&B

		Each
200	3 to 4 ft.	$2.50
800	4 to 5 ft.	3.00
300	5 to 6 ft.	3.50
140	6 to 7 ft.	5.00
65	8 to 10 ft.	11.00

These are select, nursery-grown, root and top pruned. We invite you to come and see them. Phone 395.
WHERRY'S NURSERIES, St. Marys, W. Va.

NORWAY MAPLE
Straight trunks. Fine heads. Very fibrous roots.

	10-49	50-250
6 to 8 ft.	$3.00	$2.50
8 to 10 ft., 1 to 1¼-in.	4.40	3.50
9 to 11 ft., 1¼ to 1½-in.	6.00	5.00
10 to 12 ft., 1½ to 1¾-in.	8.80	7.00
11 to 13 ft., 1¾ to 2-in.	11.00	9.00

PRINCETON NURSERIES
Princeton, N. J.

CHINESE ELM LINERS

2 to 3 ft.	$ 4.00 per 100
3 to 4 ft.	6.00 per 100
4 to 5 ft.	10.00 per 100
5 to 6 ft.	.30 each

HEAVY TRANSPLANTS

6 to 7 ft., ½ to ¾-in.	.50 each
7 to 8 ft., ¾ to 1-in.	.80 each
8 to 10 ft., 1 to 1½-in.	1.25 each
10 to 11 ft., 1½ to 2-in.	2.00 each

WEITZEL'S NURSERY, North Platte, Neb.

AMERICAN WHITE ELM
Twice transplanted, spaced for full development; machine dug to assure good roots.

	Per 10
1½ to 2 ins.	$40.00
2 to 2½ ins.	50.00
2½ to 3 ins.	70.00

Truck pickup only.
PLATT'S LANDSCAPE NURSERY
Mt. Rt. 2, 901 E. Kimberly Rd., Davenport, Ia.

SHRUBS AND TREES, B&B
All sizes available at reasonable prices.
Laurel (Kalmia latifolia), heavy clump
Sweet Gum (Liquidambar styraciflua)
Red Maple (Acer rubrum), Blueberry plants
White Birch (Betula populifolia)
Pin Oak (Quercus palustris)
Prices submitted on request.
C AND R LANDSCAPE CO.
Box 269 Pemberton, N. J.

SHRUBS AND TREES
Landscape sizes of dwarf Japanese Red Maple, 4 to 5 ft., $125.00 per 10.
Silver Maple, br., 6 to 8 ft., $157.50 per 100.
Abelia grandiflora, 2 to 3 ft., $21.50 per 10.
Pyramidal Arborvitae, 4 to 5 ft., $400.00 per 100.
Ask for complete list of stock and liners.
WARRINGTON & SON, INC.
Greenwood, Del.

PINK AND WHITE DOGWOOD
SPECIMEN LANDSCAPE MATERIAL
15,000 WHITE, 3 ft. to 16 ft.
5000 PINK, 2 ft. to 8 ft.
INSPECTION INVITED

VOYTERSHARK FARM NURSERIES
Corner of Naugatuck Ave.
and West Rutland Rd.
Milford, Conn.

ABELIAS AND BOXWOODS
ABELIA GRANDIFLORA
3 to 4 ft., heavy, $2.00 each, B&B.
2 to 2½ ft., heavy, $1.50 each, B&B.
OLD ENGLISH BOXWOOD
Liners, 3 years in bed.
$15.00 per 100, $125.00 per 1000.

BROWN'S NURSERY, HARMONY, N. C.
Phone 6-5161

HARD MAPLE (ACER SACCHARUM)
Collected. Straight trees.

	Per 1000
1 to 2 ft.	$ 55.00
2 to 3 ft.	90.00
3 to 4 ft.	120.00
4 to 5 ft.	150.00

F.O.B. Red Wing. Packing at cost.
RED WING NURSERY, RED WING, MINN.

COLLECTED HARD MAPLE TREES
Well-branched, inspected. These trees range in sizes from 5 to 6 ft., up to 12 to 14 ft. Also hard Maple liners. Write for quotations.
THE SCOTCH GROVE NURSERY
Scotch Grove, Ia.

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300 COTONEASTER ACUTIFOLIA
4 ft., heavy, 50c.
THE NEW HOMES LANDSCAPE NURSERY
Chicago Heights, Ill.
Phone Sk 5-6012

REDWOOD (METASEQUOIA), DECIDUOUS
Hardy. Beautiful foliage, fast growing.
New Dawn Redwood discovered in China recently.
2¼-in. pots, 6-in., $35.00 per 100.
All sizes up to 6 ft., $2.00 per ft.
Roots puddled in fall shipping.
PLANT HYBRID CO.
1079 Scenic Dr. Knoxville 19, Tenn.

PHILADELPHUS AUREUS
Ready for immediate shipment.
Per 100 Per 1000
2-in. pots $22.50 $200.00
250 at 1000 rate.
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1487 N. Ridge Rd. Painesville, O.

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VINES
Clematis, jackmani, Ernest Markham, lanuginosa Candida and all popular varieties. Honeysuckle Hall's Japan and Silver Lace vine. No. 1, 1-yr. Write for prices.
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ASPARAGUS ROOTS
Martha Washington, 2-yr., $15.00 per 1000.
CONCORD GRAPES
2-yr., No. 1, $10.00 per 100.
Write for quotations of large fruit trees and berry plants.
BASHAM NURSERY, Mountainburg, Ark.
Phone 2F11

WANTED

WANTED
GINKO BILOBA LANDSCAPE MATERIAL.
2, 2½ and 3-in.
Kindly include height and price in answering.
FOREST HILLS NURSERIES, INC.
1073 Reservoir Ave.
Cranston 10, R. I.

Surplus Stock
can be easily and quickly turned into Cash
by listing it in the
American Nurseryman Classified Ads.

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BURLAP

NEW BURLAP
In bolts of 100 to 125 yards
HEAVYWEIGHT BURLAP
FOR PROTECTION.

36 ins.	19½c per yard
40 ins.	20½c per yard
45 ins.	22½c per yard
48 ins.	24c per yard
54 ins.	26c per yard
60 ins.	28½c per yard
72 ins.	34½c per yard

LIGHTWEIGHT, 57-IN. BURLAP EROSION CLOTH for seeded lawns and slopes, 18½c per yard. All prices net F.O.B. New York.
Minimum order 1 bolt. Orders of 3 bolts or more freight prepaid.
LEWIS INTERNATIONAL CO.
666 Clinton Ave., Newark 8, N. J.

CHRISTMAS TREES

CHRISTMAS TREE BUYERS, ATTENTION
Not just Canadian but Nova Scotia top-quality Balsam Fir trees that really sell. Carload orders only. Your choice of size assortments. Write or phone immediately for prices and further information. See our display ad on page 88 of this issue.
HOFFER CHRISTMAS TREES
209 Colfax Rd. Havertown, Pa.
Phone: Hilltop 6-0748

DECORATIVES

CHRISTMAS WREATHS
Expertly made of
Holly, Cedar, Fir or Pine.
Bunched and bulk greens as listed.
Also Sword Ferns, Mahon,
Huckleberry and Salal.
Write for prices.

SPRING HILL FARM
P. O. Box 42 Gig Harbor, Wash.

Pine cones, ½-in. to 1-ft. long. Illustrated folder with description of autumn and Christmas uses. Western Tree Cones, 1925 Brooklane, Corvallis, Ore.

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PETERS SPECIAL SOLUBLE FERTILIZERS
20-20-20, the best general purpose feed
21-7-7 Azalea Acid (for hard-water sections)
21-7-7 Azalea Neutral (for normal water)
All above, $6.50 per 25-lb. bag.
$22.00 for 4 25-lb. bags.
PETERS SPECIAL UREAFORM FERTILIZERS (NON-SOLUBLE)
13-6-6 Organic Special. Ureaform Nitrogen and natural organics. A pot-plant special dry feed. Non-soluble.
$7.50 per 25-lb. bag.
$28.00 for 4 25-lb. bags.
Du Pont Uramite. 38 per cent nitrogen from ureaformaldehyde.
($12.00 per 50-lb. bag.)
All above material is F.O.B. Allentown.
ROBERT B. PETERS CO.
739 N. 7th St. Allentown, Pa.

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REDWOOD FLATS, K. D.
Finest stock obtainable. Guaranteed all clear heart. Size 20x15x3 ins. inside measure. $38.00 per 100.
1x1-in. Cypress stakes, pointed.
50 pcs. to bundle, 4 ft., $3.50 per bdl.
50 pcs. to bundle, 5 ft., $4.50 per bdl.
50 pcs. to bundle, 6 ft., $5.50 per bdl.
Ship same day. Cash with order, please.
YOHO & HOOKER, Youngstown 2, O.

MINNESOTA WHITE CEDAR FLATS

Order by No.	Wt. Per 100	Price Per 100
No. 1, 14x20x2¾	320	$25.00
No. 2, 14x20x2¾	400	29.00
No. 3, 12x16x2¾	260	19.00
No. 4, 12x16x2¾	275	22.50
No. 5, 14x16x2¾	275	21.50
No. 6, 14x16x3¾	290	25.50
No. 7, 15x22⅜x2¾	380	28.50
No. 8, 15x22⅜x3¾	425	33.00
No. 9, 11¼x22⅜x2¾	320	23.00
No. 10, 11¼x22⅜x3¾	400	26.75
No. 11, 14x16x5	450	30.00
No. 12, 5x11x5	160	16.00
No. 13, 5x16x5	215	18.50
Plant boxes, 5x8½x2⅜	45	5.00

All other sizes quoted on request
5 per cent discount on order of 1000 or more.
The above measurements are inside. Bottoms and sides of cedar flats are ⅜-in. thick; ends are ¾-in. Plant boxes are thinner.
All material surfaced on one side.
Your name and address printed up to 3 lines in black ink, on one or both end pieces at the following rates: Set-up charge, $1.00, plus ¾c per piece for the first 1000 ends, ½c per end thereafter. Shipped knocked-down in units of 25.
All shipments by truck unless otherwise ordered. F.O.B. Cook, Minn. Attach check.
H. C. HILL & SONS, Cook, Minn.

PRESERVATIVE TREATED FLATS
Made from a good grade of southern Pine, dipped in "Rot Not" wood preserver for longer life.
Standard specifications, inside measurements.

16x12x2¾	$21.16	20 x14x3¾	$32.25
16x14x3¾	28.10	22¾x15x2¾	31.65
20x14x2¾	27.63	22⅜x16x3¾	36.70

Plant boxes, 15x5x5, $20.00. Sides and bottoms of masonite. All prices per 100. Other sizes quoted on request. Priced F.O.B. Birmingham, Ala. We are manufacturers, not jobbers. Our quality guaranteed. Prompt shipments on any quantity. Mixed shipments of flats, plant boxes and spray boards. Write for our price list on these items. Attach check.
HIGHTOWER BOX & TANK CO.
P. O. Box 1449 Birmingham, Ala.

Sell Stock Quickly and Easily with American Nurseryman Classified Ads.

LABELS

DAHLIA OR TREE LABELS
Priced per 1000
Plain Painted

3½x⅝ ins., notched (not wired)	$2.50	$3.00
3½x⅝ ins., wired (copper)	3.30	4.10

POT LABELS

4x⅝ ins. (cartons 1000 each)	3.30	3.95
5x⅝ ins. (cartons 1000 each)	3.60	4.30
6x⅝ ins. (cartons 1000 each)	3.90	4.85
8x⅝ ins. (cartons 500 each)	6.00	7.20
10x⅝ ins. (cartons 500 each)	7.00	8.50

GARDEN STAKES
Price per carton

8x ⅞ ins. (cartons 250 each)	2.50	3.00
10x ⅞ ins. (cartons 250 each)	2.75	3.25
12x1⅛ ins. (cartons 100 each)	1.75	2.00

EVERMARK PENCILS
The original label marker. 1 doz. 7-in. pencils per box, $1.25.
Our labels are perfectly white and smooth on both sides and are pronounced by growers the best and most economical.
"We ship the same day."
YOHO & HOOKER
Youngstown 2, O.

Check Your Stock NOW!
If you have a surplus
Sell it through the
American Nurseryman Classified Ads.

ORCHID SUPPLIES

OSMUNDA, mixed. Bu., $2.00. Prof. bag, $1.00. Standard bale, F.O.B. Houston, $11.00; 2 for $21.00. Standard bale, F.O.B. Florida, $8.00; 2 for $15.00.
DETEX, a safe DDT spray. Qt., $3.50; gal., $11.00.
WALL TYPE POT HANGERS, hold up to 4-in. pots. Rust-resistant. Space savers.
Each, 25c; doz., $2.75; 50, $10.00; 100, $18.50.
BACTO ORCHID AGAR (Difco). ¼ lb., $3.85; 1 lb., $14.00.
SHREDDED WAX PAPER, protect your blooms and plants when packing and shipping. Lb., 65c; 10 lbs., $5.50.
PRICED F.O.B. Subject to change without notice.
WRIGHTWOOD FLORAL CO., INC.
2407 N. Main St. Houston 9, Tex.

PEAT MOSS

HOLLAND PEAT MOSS
"BRODLEAF" quality. Just arrived.
Standard burlapped bales,
$3.65 each; 10, $34.25.
Priced F.O.B. Houston.
WRIGHTWOOD FLORAL CO., INC.
2407 N. Main St. Houston 9, Tex.

PLANT TIES

THE NEW FADE-PROOF
QWIK-TIES
Now made of colorfast plastic for the florist trade.
Semi-invisible, economical, easy to use.
Packed in carton of 10,000 Per carton
4-in. $10.00
8-in. 18.00
12-in. 27.00
Postage paid when cash with order.
Carton lots only!
McHUTCHISON & CO.
695 Grand Ave. Ridgefield, N. J.
Phone Whitney 3-2230

PLANT TUBS

UTILITY PLANT TUBS
Made from New England White Pine

Top dia.	Depth	F.O.B. STAINED GREEN New Hampshire Per 100	F.O.B. Chicago Per 100
7-in.	7-in.	$ 87.50	$ 97.50
8-in.	8-in.	82.50	90.00
8½-in.	6½-in.	85.00	92.50
8-in.	8-in.	90.00	97.50
9-in.	6-in.	87.50	95.00
9-in.	9-in.	95.00	105.00
10½-in.	6½-in.	95.00	105.00
10-in.	9-in.	102.50	117.50
11-in.	7-in.	95.00	110.50
12-in.	7-in.	102.50	127.50
12-in.	9-in.	125.00	145.00
12-in.	11-in.	160.00	180.00
14-in.	8-in.	165.00	185.00
14-in.	13-in.	190.00	210.00

ABOVE PRICES APPLY ALSO ON QUANTITIES LESS THAN 100. MINIMUM ORDER, 5 tubs of any one size.
ALEC HENDERSON, INC.
1305 W. Randolph St. Chicago 7, Ill.
Phone Monroe 6-3082

PLASTIC FILM

POLYETHYLENE FILM
2 mil, in 200 ft. rolls, 36 ins. wide, $6.18; 54 ins. wide, $9.25; 108 ins. wide, $18.45.
4 mil, in 100 ft. rolls, 36 ins. wide, $6.57; 54 ins. wide, $9.51; 126 ins. wide, $21.37.
F.O.B. Cincinnati, O.
ROUGH BROS.
4227 Spring Grove Ave. Cincinnati 23, O.

SOIL CONDITIONERS

NEW KRUM SOIL CONDITIONER
Wonderful for PROPAGATION.
Non-metallic mineral.
Sterile and light weight.
Single 4-cu. ft. bags, $1.75 each.
5 bag lots, $1.50 each.
All prices F.O.B. Milwaukee, Wis.
TED. R. OSMUNDSEN
R. 1, Box 204 Sturtevant, Wis.

SPHAGNUM MOSS

1956 CROP NO. 1 SPHAGNUM MOSS
Large burlap bales, long fibered, clean, firmly packed; bale, $1.25. Quantity prices.
JOSEPH JAMROS, CITY POINT, WIS.

Long-fibered sphagnum moss, also ground moss. Price us on truckloads delivered.
Warrens Moss Co., Warrens, Wis.

Watch Your Results From
American Nurseryman Classified Ads.

STAKES

STAKES, GALVANIZED HARD STEEL FOR GREENHOUSES AND NURSERIES.
BENCH WIRE, galvanized.
STAKE FASTENERS
Prices and samples sent on request.
SCHUPP SUPPLY CO., WILMETTE, ILL.

STAKES—*Continued*

BAMBOO STAKES, DOMESTIC
DIRECT FROM THE PRODUCER

PENCIL THICKNESS	Per 1000
1½ ft., green	$3.60
2 ft., green	4.80
3 ft., green	7.20

MEDIUM HEAVY, ¾ to ½-in.	500	1000
1½ ft., green or natural	$ 2.85	$ 5.70
2 ft., green or natural	3.80	7.60
2½ ft., green or natural	4.75	9.50
3 ft., green or natural	5.70	11.40
3½ ft., green or natural	6.65	13.30
4 ft., green or natural	7.60	15.20
5 ft., green or natural	9.50	19.00
6 ft., green or natural	11.40	22 80
7 ft., green or natural	13.30	26.60

HEAVY Per 100	½-⅝	⅝-¾	¾-1
4 ft., green or natural	$2.88	$3.44	$ 4.24
5 ft., green or natural	3.60	4.30	5.30
6 ft., green or natural	4.32	5.16	6.36
7 ft., green or natural	5.04	6.02	7.42
8 ft., green or natural	5.76	6.88	8.48
9 ft., green or natural	...	7.74	9.54
10 ft., green or natural	...	...	10.60
12 ft., green or natural	...	...	12.72

Approx. average thickness at bottom end.
A. C. PATTERSON, CENTERTOWN, KY.

NBS
NURSERY BAMBOO STAKES

These imported stakes are specially selected for nursery use. All are bottom or butt cuts for minimum taper, cut closely to a joint to reduce splitting. These are the finest quality available.

	Per bale
4 ft., ½ to ⅝-in. dia., 500 per bale	$22.50
5 ft., ⅝ to ¾-in. dia., 250 per bale	17.50
6 ft., ⅝ to ¾-in. dia., 200 per bale	17.50
7 ft., ¾ to ⅞-in. dia., 150 per bale	19.00
8 ft., ¾ to ⅞-in. dia., 100 per bale	16.00

Less these generous quantity discounts: 5 bales up, less 10 per cent; 10 bales up, less 15 per cent; 25 bales up, less 20 per cent. Bale lots only.
F.O.B. New York. Immediate shipment.
Pencil thick bamboo stakes also available. Write for prices.
McHUTCHISON & CO.
695 Grand Ave. Ridgefield, N. J.
Phone Whitney 3-2230

BAMBOO CANE STAKES
Dyed green, pencil thickness.
Packed 2000 per bale.

	Per 1000	Per bale
1½ ft.	$ 3.50	$ 6.00
2 ft.	4.50	8.00
2½ ft.	5.50	10.00
3 ft.	7.00	13.00
3½ ft.	8.50	16.00
4 ft.	9.50	18.00
5 ft.	12.50	24.00

6 ft., per bale of 500, $10.00.

SPLIT BAMBOO, DYED GREEN

	Per 1000	Per bale (5000)
12 ins.	$2.50	$10.00
15 ins.	3.50	15.00
18 ins.	4.50	20.00
24 ins.	5.50	25.00

F.O.B. CHICAGO
Quantity discounts: 10 bales up, less 5 per cent; 25 bales up, less 10 per cent.
ALEC HENDERSON, INC.
1305 W. Randolph St. Chicago 7, Ill.

CYPRESS PLANT STAKES
50 pieces to bundle.

1x1-in.—3 ft., pointed	$3.00 per bundle
1x1-in.—4 ft., pointed	3.50 per bundle
1x1-in.—5 ft., pointed	4.50 per bundle
1x1-in.—6 ft., pointed	5.50 per bundle
1x1-in.—7 ft., pointed	7.00 per bundle

These stakes are made of cypress and redwood; are good, strong stakes and will give long service. "A little better than seems necessary."
WE SHIP SAME DAY!
YOHO & HOOKER
Youngstown, O.

TRADE BOOKS

TRADE BOOKS.

Suggestions for nurserymen and their employees:

NEW DESIGNS FOR SMALL PROPERTIES,
by M. E. Bottomley, $4.00.

MANUAL OF CULTIVATED TREES AND SHRUBS,
by Alfred Rehder, $12.50.

GREENHOUSE HEATING AND CONSTRUCTION,
by H. E. Gray, $1.50.

THE FRIENDLY EVERGREENS,
by L. L. Kumlien, $10.00.

SOILS AND FERTILIZERS FOR GREENHOUSE AND GARDEN,
by Alex Laurie and D. C. Kiplinger, $2.50.

These books and others on horticultural subjects may be obtained, postpaid, at the publishers' prices indicated, from

AMERICAN NURSERYMAN
343 South Dearborn Chicago 4, Ill.

CALIFORNIA CONVENTION

[Continued from page 8]

plans to meet this problem. A meeting was later called for October 9 to 11 at Omaha, Neb., with the assistant secretary of agriculture and the president of the state foresters' association. State foresters of the great plains area were also to be present.

Mr. Stocking said that information obtained by the A. A. N. reveals that $200,000 has already been allotted to Wisconsin, $240,000 to Minnesota, $225,000 to Colorado and $250,000 to Georgia. Soon all of the $4,000,000 will be allocated for development of state nurseries.

Next year $6,000,000 will be available, and it will probably be difficult to stop these funds, as the politicians like to get their hands on tax money, he stated.

This does not affect the nurseryman in California at the present time, he said, except that it gives the politicians the idea of extending the state nurseries there, and that would hurt the trade.

Mr. Stocking summarized other activities of the A. A. N., regretting that there exists a feeling among a few that the A. A. N. exists for the large nurseryman and that the little fellow is forgotten. He emphasized the fact that in the 18 years he had been a member he had never known of a case where the small nurseryman had been neglected. Furthermore, he added, the small nurseryman, while receiving the same benefits that the large one does, pays far less dues. It is the small nurseryman who needs the A. A. N. to help fight his battles, since he does not have the funds.

Price Cutting

Talking on "Sales Sense in Retailing," Tuesday afternoon, Erwin H. Klaus, marketing director of Northrup, King & Co., Berkeley, covered price cutting and salesmanship. Before any price is cut, look at how many more units will have to be sold to take in the same dollars, he urged. On an item on which a gross profit margin of 40 per cent is made, making a 10 per cent price cut means one-third more units will have to be sold to take in the same number of dollars.

A formula to determine how many more units have to be sold is to subtract the price cut figure from the profit margin figure and divide the result by the product of the price cut figure times 100.

To avoid price cutting it is necessary to have the right price, he said. Customer benefit from the product is the basis for getting the right

The Original SWISS ROTARY TILLERS

NOW HAVE UNBREAKABLE CLOGPROOF TOOLS PLUS REVERSE-A-MATIC DESIGN FOR ATTACHMENTS

Write for details of new models.

E. C. GEIGER CO.
P. O. Box 270
NORTH WALES, PENNSYLVANIA
U. S. A. Distributor

PRESERV-ALL

STOPS . . . Dry-Rot
Mildew — Termites

Lasting Protection for Wood

Greenhouses — Coldframes — Flats
Stakes — Posts — Signs — Sales Courts

ROTPROOF ROPE—CANVAS—BURLAP

Preserv-All is applied by brush, spray or dip; can be painted over. Gives up to 5 times longer life to materials treated.

Preserv-All

	5-gal. Protector cans	55-gal. drum
Green	$1.70 gal.	$1.60 gal.
Builder Green	2.10 gal.	2.00 gal.

Prices F.O.B. Providence, R. I. or your nearest distributor

PRESERV-ALL WON'T HARM PLANTS

Write for complete catalog of nursery supplies.

AMERICAN-DUTCH TRADING CO., INC.
47 Codding St. PROVIDENCE, R. I.

FLOCK CHRISTMAS TREES

and increase your profits. Now is the time to start planning details. Write for complete catalog of equipment, supplies and instructions on "how to do it."

FLOC-FLO ENGINEERING DESIGN
5802 Olson Hwy. Minneapolis, Minn.

FERTO-POTS MILLIONS USED PLANT EATS POT

	Per ton C. L.
FERTO-GERM. Compost, Manure	$ 48.00
MULCHNUR. 3-6-3 All Organic	60.00
BONE MEAL RAW IMT.	60.00
GARBAGE TANKAGE. 3½ per cent Am.	18.00
SE-BO-PHOS. 20 per cent T.P. Acid	18.00
FEATHER TANKAGE. 17 per cent Am.	130.00

Write for Price List. Small Quantities.
ALLEN CO., PITTSTOWN 3, N. J.

price. Sales, he added, not cost of merchandise, are the only realistic basis for figuring selling price. Sales are dependent on salesmanship, which is knowing how to determine what will benefit a customer and how to deliver that benefit by persuading the customer to want what he can use for his benefit. That, he said, is what advertiisng is doing all the time.

An illustrated travel lecture by Arthur Navlet, former seedsman and nurseryman of Oakland, highlighted the Tuesday evening entertainment. Mr. Navlet took his audience on a tour of European gardens through the medium of some splendid colored slides. He told of many interesting experiences in connection with his current work of conducting European tours. Shown in his travelog were scenes from the Chelsea flower show at London, the national tulip show in Holland, the Villa d'Este water gardens at Rome and the Partierre Gardens in Germany.

The Hous Brothers quartet entertained with popular numbers in the western style.

Wednesday evening members supplied their own amateur entertainment. Acts sponsored by Superior, San Joaquin, Redwood Empire and Central chapters contributed toward a hilarious evening. The Los Angeles chapter lampooned association officers with a mock directors' meeting.

As customary, the second day of the convention is devoted to athletic contests entered into enthusiastically by the nurserymen. The South team won the baseball game 10 to 5, much to the consternation of the North team, which had won this annual event year after year. The North was defeated in a disastrous sixth inning, when the South scored seven of its 10 runs. The Neil A. Maclean trophy was awarded to James Gibbs, Winsel-Gibbs Nursery, Los Angeles, by Esler Johnson, of the Maclean firm, at the president's banquet. James Wilson, Peters & Wilson, Millbrae, won the trophy for low gross in the golf tournament, and Bill Meadows, low net.

The swimming event was won by Blanche Little, Sacramento; horseshoe trophy, by Harvey Ehlers, of the Centinela chapter; the ping-pong tournament, by Dave Cunningham, and shuffleboard, by Mr. and Mrs. Melvin Surface, Portland, Ore. In the women's golf tournament, Sally Springer won the trophy for low gross, and Laura Howard, low net.

At the Thursday night banquet, outgoing president Donald C. Perry introduced incoming president David L. Cunningham, who re-

DON'T FORGET LAST YEAR'S FRIGHTFUL LOSSES FROM WINTER DAMAGE!

Last year, millions of dollars' worth of fine planted stock suffered the abuses of winter burn and sunscald through neglect and ignorance.

Millions of dollars' worth of transplanted stock may also succumb this year, through ignorance and neglect! Plantsmen who protected their trees last winter saved thousands of dollars of plant material.

Ever since horticulture became a science, gardeners have looked for a simple way of protecting precious shrubs and trees against the ravages of winter . . . and there was no simple way UNTIL WILT-PRUF CAME ALONG!

NOW PLASTICS

Now out of the world of miracle plastics comes a protective coating which, for pennies per application, will resist the nuisances of winter weather without resorting to expensive and bulky wrappings. Wilt-Pruf is a harmless plastic liquid, which, when sprayed on plant material, forms a barrier against the cold elements and at the same time retards the shocking water losses and resultant wilt of sun scorch. Similar applications of Wilt-Pruf before autumn transplanting assure added plant protection against damage on your fall landscape jobs.

BETTER PROTECTION DEMANDED

Homeowners will be seeking a better solution to these winter problems—because of last year's failures! They will ask many questions—they will want *up-to-date* answers! So why not face the facts? Let them know that economical and effective WILT-PRUF is *your* best weapon against fall and winter damage—and theirs!

Wilt-Pruf protects valuable plant material in many other ways. Get all the details now from your nearest Wilt-Pruf distributor.

NURSERY SPECIALTY PRODUCTS, INC.

CROTON FALLS, N. Y.

WANTED and FOR SALE ADS

Help and Situation Wanted and For Sale Advertisements.

Display: $4.00 per inch, each insertion. **Liners: 35c** line; minimum order **$3.50.**

HELP WANTED

PART-TIME OR FULL-TIME SALESMEN

Liberal commissions offered to men who call on vegetable growers and farmers in their localities. We are a well-established vegetable plant producer, offering vegetable plants in large lots to commercial growers. With more than 30 years' experience, we have many established accounts throughout the country. No stock, deliveries, or collections required. Write for full information or phone collect.

BOLTMAN ASPARAGUS CO.
516 Lincoln Ave. Rochelle, Ill.

HELP WANTED

SALESMEN

To call on nurserymen, garden centers, landscape gardeners, florists and seedsmen for large midwestern wholesale nursery offering complete line of nursery stock. Can carry as side line. Good territory open; straight commission, monthly advances. For full details write Box 329, care of American Nurseryman.

HELP WANTED

EXPERIENCED LANDSCAPE CREW FOREMEN

Interest in doing high-quality landscape work for firm specializing in good design and unusual plant material important. Ability to handle plants according to best horticultural practices essential. Opportunity for advancement with growing business in metropolitan Wilmington. Apply in person, or by letter, to:

W. Earl Hamilton, Nursery Manager
MILLCREEK NURSERY
Rt. 3, Newark, Del.

HELP WANTED

LANDSCAPE NURSERY SALESMAN

Leading landscape nursery and garden center in Manhattan, Kan., offers steady employment to an experienced landscape salesman. Must be progressive and capable of drawing plans, selling and supervising landscape jobs. Applicant must furnish references, give age and qualifications for the job. Enclose picture with reply. Your inquiry will be kept strictly confidential.

Guy D. Mathews, owner
MANHATTAN NURSERY
R. 1 Manhattan, Kan.

HELP WANTED

LANDSCAPE SALESMEN

Excellent opening for two experienced landscape salesmen capable of making contacts, drawing plans and preparing estimates. Excellent opportunity and top salary for the right men. Write for appointment.

Mr. Don Schultz
SECOR LANDSCAPE CO.
3340 Secor Rd. Toledo, O.

FOR SALE

A well-established nursery and landscape business. Composed of 18 acres in two farms. Owner will sacrifice because of old age. Includes: G. M. C. truck, implements and all kinds of tools too numerous to list, cottage and large garage. One place located on Rt. 45, Mifflinburg, Pa., and the other on R. D. 1, Mifflinburg. Nursery stock includes all kinds of trees and plants too numerous to list.

R. D. Condon, Proprietor
BUFFALO VALLEY NURSERY
& LANDSCAPE FARM
Mifflinburg, Pa.

HELP WANTED

LANDSCAPE ARCHITECT

Must have sales ability, give estimates, sell and complete supervision of job. Permanent. Real opportunity to energetic man who has initiative to succeed. Car essential. Salary open, plus bonus. Immediate employment. Write full details, send photo and state salary expected in first letter.

HALLA NURSERY
4917 Eden Ave. Minneapolis 24, Minn.

HELP WANTED

General manager in charge of production for expanding southern nursery. Good facilities, pleasant working conditions. All replies kept strictly confidential. Our employees know of this ad. Write to Box 290, care of American Nurseryman.

HELP WANTED

GARDEN CENTER MANAGER IN DALLAS

Experienced in merchandising, sales promotion, advertising and general business administration. References necessary. Age 30 to 40. Give complete resume in first letter. All replies strictly confidential. Address replies to Box 326, care of American Nurseryman.

HELP WANTED

Propagator needed immediately for foliage plants and tropicals, minoring in general line nursery stock. Salary open. Dallas area. Ideal working conditions. Replies confidential. Give full information in first reply. Address replies to Box 327, care of American Nurseryman.

HELP WANTED

Man of high ability and integrity to operate garden center now under construction. An unusual opportunity for the right party. Experience and references required.

GERARD K. KLYN, INC.
Mentor, O.

SITUATION WANTED

Landscape design major, B.S. in horticulture, with 2 years of graduate study, art school experience. Desires work in landscape design, sales or related work. Single, 28 years old. Address replies to Box 328, American Nurseryman.

HELP WANTED—Landscape Salesman—Excellent possibilities for salesman to work out of office of one of the largest nurseries in North Carolina. Write full details. NORTH STATE NURSERY CO., Julian, N. C.

FOR SALE

GREENHOUSE

Lord & Burnham greenhouse, 36x90-ft., pipe frame. Cast-iron gutters on one side. Gear-driven vent machines for both top and side vents. Cypress roof bars in excellent condition. Glass is 85 per cent good. Size of glass is 16x24 ins. Many extra shelf brackets and pipe supports. A complete unit of brand-new aluminum barcaps to fit this house, plus 600 lbs. of Lord & Burnham greenhouse putty. These last two items would cost $500 alone, if you were to buy separately. Our price complete is $2,000 cash. Knocked down ready to load. F.O.B. Huron, O. Can be seen at Barnes Roses, Inc., Huron, O. Phone: 6951.

FOR SALE

EQUIPMENT BUSINESS

Our well-developed line of tree diggers and root pruners. Seven years has proved their worth. We see unlimited potentials in the 31 billion dollar federal road program. Millions of trees will have to be grubbed.

CHARLES ADAIR CO.
1225 Cottage Grove Ave.
Chicago Heights, Ill.

FOR SALE

Nursery in western Oregon, 12 acres of land—4 acres in shrubs, 1044 sq. ft. of glass, on river and paved road. Good supply of water, good drainage and good soil. Equipment and 5-room modern house. Doing good business. Priced to sell. Terms. Address replies to Box 330, care of American Nurseryman.

FOR SALE

75-acre nursery, fruit and vegetable farm in western Canada. Beautifully laid out, roads and river with bridge. Ideal soil, sandy loam on clay, excellent rainfall area. Good buildings, large fully modern house. Good business trade on main hard-topped highway. Address replies to Box 325, care of American Nurseryman.

FOR SALE

Used complete greenhouses. Used greenhouse materials, glass, pipe, valves, etc. Greenhouses bought for wrecking.

SEABOARD GENERAL SUPPLY CO.
1080 Magnolia Ave. Elizabeth, N. J.

SITUATION WANTED

Thinking of a change? Tell potential employers about your abilities by using an ad in this department. The cost to reach the widest readership in the industry is only $4.00 per inch.

FOR SALE — Used 30-lb. tins, $50.00 per 1000 in carload lots. F.O.B. Beulah, Mich. Car average 5000-tin capacity. Cans cleaned before loading. For freight rates see your local agent. Lids available at $15.00 per 1000. Samples on request. PET-RITZ FOODS DIVISION, PET MILK CO., Frankfort, Mich.

FOR SALE—Businesses may be offered for sale by use of a want ad liner such as this. Cost: 35c per line (minimum order $3.50). Your advertisement in this section describing the property offered for sale will be seen by more than 9800 American Nurseryman readers.

sponded with a brief statement of policy. Mr. Cunningham said that he would appoint several new committees: An executive committee, made up of past presidents, to guide and advise the directors; a wholesalers' committee, composed of southern California growers, to formulate group wholesale recommendations; a retailers' committee, composed of northern California nurserymen, to study improvement in retail operations, and a highway committee, to promote highway planting for beautification and safety and put an end to nursery stock production by the state.

The award for the outstanding horticulturist of the year was announced by Bert Kallman, Kallman's Garden Nurseries, Santa Barbara. The recipient, who was unable to attend, for reasons of health, is William Hertrich, curator emeritus of the Huntington Gardens, San Marino. Ray Hartman, Leonard Coates Nurseries, San Jose, last year's winner, accepted on behalf of Mr. Hertrich.

Past presidents, led by Gene Fowler, Fowler Nurseries, Newcastle, and George C. Roeding, Jr., California Nursery Co., Niles, inducted three immediate past presidents into Los Pasados. The "has been" ritual was read by George C. Roeding, Jr., and responded to by Donald C. Perry.

After the award of the major convention prize, a portable TV set, to Paul Von Kempf, Pacific Nurseries, Colma, the nurserymen and their wives were entertained by the Ensemblettes, of Sacramento.

Retail Panel

A panel discussion was conducted by Jack McDonnell, McDonnell Nursery, Oakland, at the Tuesday afternoon session. In opening the discussion, Mr. McDonnell called attention to the results of a questionnaire circulated at the June refresher course at the California Polytechnic College, San Luis Obispo, in which an overwhelming preference for management and merchandising subjects was expressed. For that reason, Mr. McDonnell selected topics for discussion along those lines.

Carl Sickler, C. A. N. publicity director, spoke on "Advertising Budgets." He recommended a budget of 3.5 to 5 per cent of the annual gross income and suggested that the retail nurseryman budget his funds to the best mediums available in his community, whether it be newspaper, telephone directory, radio or TV. The main idea is to keep up a consistent campaign in the mediums selected.

Hollis Gray, Cottage Nursery,

More and more nurseries *use and sell* BOTH

PREMIER PEAT MOSS

Premier Peat Moss is the No. 1 material for soil improvement . . . mulching . . . transplanting . . . lining out . . . seedbeds . . . and many other uses. That's why Premier is the biggest selling brand to *nurseries* and to *home gardeners.*

Use and *sell* Premier Peat Moss now —in moisture-proof, rot-proof plastic bales—big-value bales—colorful bags and cartons!

Extra-Fine SOIL X-PEDITER

Premier Soil X-pediter is the extra-fine sphagnum peat organic—so fine in texture that it flows freely, spreads easily and blends uniformly with the soil. It makes roots feed faster—makes fertilizers work better.

Display Soil X-pediter — in double plastic-burlap bags and clear plastic bags—fast sellers at a high markup and established retail prices.

Any Combination Can Be Shipped in One Car

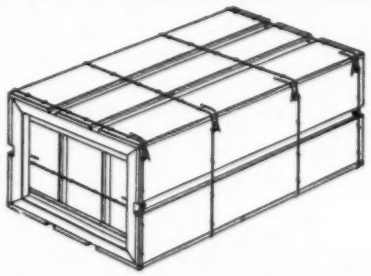
Premier gives you the best *packaging* deal as well as the best *quality*—backed by superior resources and service.

Also Premier European Peat Moss in 3 sizes burlap-wrapped bales

Write, wire or phone for prices

PREMIER PEAT MOSS CORP., 535 FIFTH AVENUE, NEW YORK 17, N. Y.

FOR THE BEST WIRE-BOUND BOXES AND CRATES



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MAIN BROS.
BOX & LUMBER CO.

KARNAK, ILL.

We have manufactured boxes at Karnak for more than 50 years.

TAKE THE S-T-R-E-T-C-H OUT OF TREE TRIMMING

BARTLETT

Jointed Tree Trimmer

Work without a ladder — eliminate the fatigue of reaching. The No. 1-WJ Pruner, with 4-ft. sections, makes an 8, 12 or 16-ft. pole. Compound lever action head cuts large limbs as easily as small ones.

8 ft., 2 sections, **$17.50**

12 ft., 3 sections, **22.45**

16 ft., 4 sections, **27.40**

No. 414-M Meylan Pruning Saw

This saw, with special blade of heavy tool steel, is furnished in either 16 or 18-in. blade length. Special handle is tapered to fit hand and is 36 ins. long. Man of average height can prune 9½ ft. above ground without ladder.

M-414 Meylan Saw, 16-in. blade **$12.00**

M-414 Meylan Saw, 18-in. blade **12.50**

TREE COMPOUND

Write for Catalog No. 36 showing complete line of Bartlett trimming and pruning tools and tree materials.

All prices delivered in U.S.A.

TRADE MARK REG. COMPOUND

TREE SURGERY SUPPLIES

BARTLETT MFG. CO.
Dept. 58
3003 E. Grand Blvd.
DETROIT 2, MICH.

Vallejo, talked on "Sales Meetings." He told how weekly sales conferences lay the groundwork for a vigorous sales campaign on the lines selected for promotion.

James Wilson, Peters & Wilson Nursery, Millbrae, spoke on "Stock Control." He recommended that all retail nurserymen keep records of the source, quantity and price of each item purchased to serve as a guide for management and sales personnel and to avoid confusion in purchasing.

Charles Burr spoke on "Signing and Pricing," explaining the sales cost saving in signs that answer customers' questions and the importance of keeping all merchandise properly priced. He mentioned the availability of a standard sign marker from the association that gives the customer complete information on any plant variety at a glance.

William E. Schmidt, Schmidt Nursery, Palo Alto, talked on "Color" and how he made it work for him in the nursery. Color not only produces traffic, but loosens the purse strings of visitors as soon as they step through the door. He recommended pastel shades for the carriage trade, bright colors for the southern Europeans and yellow and white for Jewish visitors.

Ray Johnson, Christian & Johnson, Chico, told how he creates traffic in the summer months. He explained that his nursery is located in a high-temperature summer climate. He does not try to sell nursery stock in summer, but concentrates on accessory items for more comfortable outdoor living. These are featured in his weekly TV show whenever practical.

A. A. N. Breakfast

At the breakfast meeting of the California chapter of the A. A. N., presided over by David Stump, the members heard a report of the convention at Los Angeles by J. Awdry Armstrong, chairman, and brief talks by Clyde Stocking, A. A. N. president, and Leonard (Bud) McGuire, Tacoma, Wash., the new director for region VI. Willis Stribling reported a balance of $852.71 in the chapter treasury, due to a surplus of contributions by chapter members to the convention entertainment fund. It was voted to apply this money to a scholarship fund to be expended at the rate of one $200 scholarship each year for four years.

James Wilson reported for the nominating committee, and its slate was adopted unanimously as follows: President, Donald C. Perry; vice-

TWINE

ROPE

TWIST-EMS

CAW-CAW Fuse Rope Stop Bird and Animal Depredation. Write for circular.

One of the World's Largest Stocks of Twines and Rope

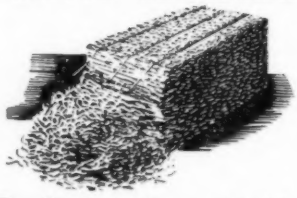
J. E. *Fricke* CO.

40 N. Front St., PHILADELPHIA 6, PA.

Mills: HULMEVILLE, PA.

Wood Feathers

SCREENED
BALED RED CEDAR SHAVINGS



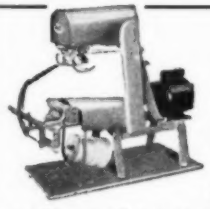
The Perfect Nursery Packing

Manufactured by

MONARCH SHINGLE CO.

P. O. BOX 98 N. PORTLAND, ORE.

LOW DELIVERED PRICES — We Solicit Your Inquiries



FELINS BUNCH TYER

Automatically adjusts itself and ties any size bunch up to 19 ins. in circumference. Ties roses, glads, seedlings, as well as any other type nursery stock and cut flowers. Fast and efficient. Tying mechanism inverted so that dirt will not get into it, contributing to longer life.

FELINS TYING MACHINE CO.
3351 N. 35th St.
Milwaukee 16, Wis.

president, David L. Cunningham; secretary-treasurer, Willis Stribling, and new delegates, J. A. Armstrong, Jr., and Jack Schneider, Orchard Nursery, Lafayette. Incumbent delegates are George C. Roeding, Jr.; Peter Mordigan, Mordigan Evergreen Nurseries, San Fernando, and Walter C. Borchers, W. B. Clarke & Co., San Jose.

The 1957 convention will be held at Santa Barbara, with the Tri-County chapter as host, and the 1958 convention will be hosted by the Peninsula chapter, the site to be selected.

CATALOG OF NEW FRUITS

The 1956-57 edition of "A Catalog of New Fruits" issued by the New York State Fruit Testing Association is now available upon request to the association, in care of the New York state experiment station, Geneva, N. Y. While most of the offerings in the catalog originated at Geneva, new fruits from other sources believed to have special promise are also included. The descriptions of the new fruits are based on available data on their performance at Geneva, giving both the strong and weak points of each variety. Information on the planting and care of nursery-grown fruit stocks is also included in the catalog.

LOUIS A. BAILEY, R. R. No. 2, Mayville, N. Y., recently retired and sold his nursery business.

SALE of Ward's Flower Ranch, East Lansing, Mich., has been announced by Bernard Ward, who had operated the business for 30 years.

BAILSTONE NURSERY, East Moriches, N. Y., owned and operated for more than 30 years by Mr. and Mrs. George Stone, has been sold to Norman K. Goldstein, of Newark, N. J., who will operate the nursery at its present location.

W. H. FORTUNE is opening a new nursery, with greenhouse tropical gardens featuring a wide variety of rare as well as common plants. The business will be known as Fortune's Nursery and be located at 3414 Highway 51, South Memphis, Tenn.

OWNERSHIP of the former H. Lemmen & Sons Nursery, Allendale, Mich., now resides in the two sons, Donald and Roger, who have doubled the original acreage and are now growing about 30,000 ornamentals. H. Lemmen is currently growing Christmas trees only.

YOU WILL BUILD BUSINESS WHEN YOU say *MERRY CHRISTMAS* with

HELLER-GRO

They'll Love it! Love it!

Give your customers

HELLER-GRO IN THIS BEAUTIFUL

CHRISTMAS MAILER

. . . because, as hundreds of nurserymen will tell you, it makes the biggest hit! HELLER-GRO is the Christmas remembrance they'll use and appreciate. The results on their house plants will make them ask you to feed HELLER-GRO to their gardens and lawns next spring. It's a natural gift for you, because when you give HELLER-GRO, you give healthier, longer life to plants! Give HELLER-GRO this Christmas! Let us know how many you need.

ORDER NOW FOR QUICK DELIVERY

Mailers and wrap-around Christmas labels are separate for easy addressing.

3¼-OZ. TUBES, CARTONS AND CHRISTMAS LABELS .. $35.50 per case of 96

HELLER GREENHOUSE LABORATORIES

218 E. Pikes Peak Ave. COLORADO SPRINGS, COLO.

CORRY PEAT CAN'T BE BEAT!

Yes— more Landscape and Nursery Men are changing to CORRY HIGH QUALITY FRESH WATER PEAT and PEAT HUMUS. Packaged in plastic lined bags and bulk car and truck loads.

• *FOR FURTHER INFORMATION WRITE:*

CORRY BOG INC. • CORRY, PA.

PROPAGATION OF PLANTS, by Kains and McQuesten. Nursery and greenhouse reference. 637 pages, **$5.00.** American Nurseryman, Chicago 4, Ill.

Leaf Markings under Air Pollution

By H. M. Benedict and J. P. Nielsen

There are many types and kinds of air pollutants. They may exist in the atmosphere as gases (hydrogen fluoride), as liquids (sulphur trioxide which quickly reacts with water to form droplets as sulphuric acid), or as solids (such as coal dust or cement dust), or as all three (such as smog, in which gaseous and liquid and solid particulate matter has been found). They may exist as a single compound, as sulphur dioxide, or as mixtures of many compounds, again such as smog, or the smoke palls that hang over some cities where true smog has not yet occurred.

This is a discussion of the markings produced on vegetation or plant leaves by various air-borne materials. Regardless of what type of plant is being considered—weed, vegetable, ornamental shrub or shade tree—the ways in which air-borne contaminants may affect the leaves of plants are much alike, depending on the nature of the air-borne materials.

Leaf Structure

This is due to the fact that basically the structure of all leaves is the same. It consists of an upper and lower tough layer of cells known as the upper and lower epidermis. Between these layers is a mass of more or less loosely arranged cells permeated by air spaces and by vascular tissues which connect with the petiole of the leaf and thence with the main stems. The air spaces in this loosely constructed tissue called mesophyll connect with openings in the epidermis called stomata.

The primary function of leaves is to manufacture food for the rest of the plant, i.e., stems, trunks and roots, so that these organs may remain alive. However, the leaf itself has to remain alive, and in order to do this, each cell must receive certain materials, such as minerals and water, from the rest of the plant, and at the same time must have facilities for returning the excess food it has manufactured to other parts of the plant where it may be utilized immediately or stored for future use. The much branched vascular system of veins provides the pathways by means of which the cell is supplied with its needs and through which it ships its excess products. As a matter of fact, practically every cell of the leaf may be reached by the intricate vascular system or the air spaces.

For the manufacture of food, the leaf needs to receive sunlight, carbon dioxide and water. In addition, chlorophyll must be present, which requires a supply of magnesium, iron and other minerals and materials from the soil by way of the roots, stems, branches, etc. The light, of course, reaches the cells from the sun and can penetrate several layers of tissues. Water and mineral elements, as indicated, usually come from the soil by way of the roots, etc. However, during rains and fogs, water may be taken in directly by the leaves.

Carbon dioxide is taken into the leaves through the small openings or stomata previously mentioned. These usually occur on the lower surface, but may be found on the upper surface as well. These openings are about 1/5000 of an inch in diameter. Many more than one million are found per square inch of leaf surface. Carbon dioxide occurs in the atmosphere in a concentration of about 3 parts in 10,000, or 300 parts per million.

Carbon Dioxide Intake

It must be remembered that all the carbon and most of the oxygen found in the cellulose and other compounds that make up the wood of a giant sequoia, for example, was obtained from the carbon dioxide in the atmosphere, and this, plus huge amounts that were not converted into wood, all came in through the stomata of the leaves. Thus the material in a sequoia trunk 200 feet high and averaging 10 feet in diameter represents the carbon dioxide in 24,000,000,000 cubic feet of air. All of this, plus two to five times this amount which never went into wood,

Talk, "The Markings Produced by Various Air Pollutants on Leaves," given by H. M. Benedict and J. P. Nielsen, of the Stanford Research Institute, at the recent meeting of the Western chapter of the National Shade Tree Conference, at Palo Alto, Calif.

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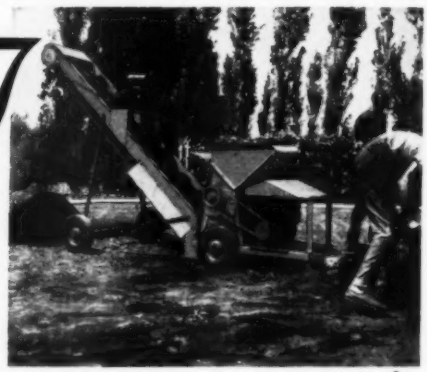

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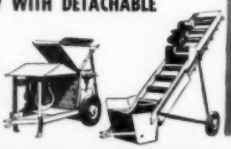

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but was used up in keeping the tree alive, had to diffuse through the tiny stomata into the leaf tissues to bring about the growth of the tree.

Similarly, a ton of alfalfa hay produced per acre in one month's time means that 3,000 pounds of CO_2 were required just for the dry weight of the hay. All the CO_2 was completely extracted from 80,000,000 cubic feet of air by the alfalfa leaves growing on that acre. In addition to this, probably an equal tonnage of food was produced which was utilized in keeping the plants alive, which means that another 80,000,000 cubic feet, or a total of 160,000,000 cubic feet of air had to move through the leaves in order to produce the crop.

Nondiscriminating Stomata

It can be seen, then, that leaves are exceedingly efficient collectors of gases that occur in dilute concentrations in the atmosphere. This fact, plus the fact that they are unable to distinguish between the gases they need and those that are harmful, is the leaves' undoing when toxic air pollutants are present. Just as they can gather in and concentrate carbon dioxide, so do they gather in contaminants.

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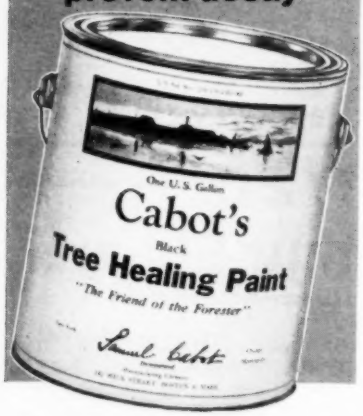

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which air pollutants may affect the leaves of plants:

First, inert or insoluble dusts, such as are stirred up along gravel or dirt roadsides or are produced by certain industries, could conceivably accumulate on the leaves in such quantities that the amount of light reaching the tissues where food was being made would be so reduced that the rate of this food manufacture might be interfered with. Another effect of these inert dusts would be simply to clog the stomata to such an extent that the entrance of CO_2 into the leaf would be interfered with and food manufacture slowed down in consequence.

The effect of the shading would result in an over-all lighter green leaf color without the production of marked and unmarked areas on the leaves. Clogging of the stomata might not have any visible effect, or if it was too severe it might prevent gas exchange completely and the leaf would, in an extreme case, literally suffocate and die. In reality, neither of these conditions often develops. Everyone has seen weeds along roadsides so completely coated with dust that the green color is completely obscured, yet these weeds are disgustingly healthy.

Effects of Dust

Evidence is accumulating that the occurrence of dust in large quantities in the atmosphere may have an indirect effect on vegetation, in that it favors the development and propagation of insect pests. Along dust roads in the northwest, heavy infestations of white scale have occurred on ponderosa pine trees. In other areas, black scale has been favored by atmospheric dust. The black scale is a serious pest of ponderosa pine and may even kill the trees. The dust in the atmosphere seems to inhibit the development of certain small wasps which are the natural enemies of the scale. Thus heavy dust in the atmosphere kills insects which feed on scale which may kill the trees. Thus the dust has an indirect effect, once or twice removed. This points out the danger of interfering with natural processes too much.

The second way in which leaves may be marked is by actually corrosive material, such as SO_3, which reacts with water to form droplets of sulphuric acid. Such materials actually etch or pit the surface of the leaves.

The third and most usual manner in which air pollutants affect leaves is not externally, as has been the case of the two previous manners mentioned, but internally. This trouble results from the absorption of the

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polluting gases or soluble particulate matter into the leaves through the stomata. It has already been pointed out what an extremely efficient mechanism the leaf is for the removal of gaseous materials from the atmosphere when they are present in even dilute concentrations. Once these materials are taken into the leaf, they may affect the cells immediately surrounding the door through which they entered or they may be translocated and concentrated by means of the leaves' excellent conducting system into specific portions of the leaves, usually the tips or the margins.

Varying Tolerance

The cells and tissues of the leaves are able to tolerate various amounts of different pollutants, but when this tolerance is exceeded, then the cell or tissues are injured or usually killed. The amount of the pollutant that can be tolerated varies with the pollutant and with the plant. Thus, some concentrations of sulphur dioxide may completely kill the leaves of one plant, yet not mark the leaves of another.

Or some plants may build up a concentration of 4,000 ppm of fluoride in their tissues and not be marked, e.g., cotton, while others may be marked at 20 ppm, e.g., gladiolus.

Little work has been done as yet to study the effect of pollutants on the leaves of shade trees; so most of the present discussion concerns weeds and shrubs. As pointed out earlier, the type of marking is fairly consistent between species, so that at least general effects of various pollutants can be described. The pollutants discussed are those emitted as a result of man's activities, including various types of industry.

A trip along any gravel road in the summertime will show the effects of inert dust on vegetation. The amount that is tolerated without having growth directly affected is surprising. Of course, growth may be affected more than is realized, because usually there are no control plants close by to show how much growth the plants would have made if the dust had not been present.

A fumigant that actually corrodes the plant when it is deposited on the leaves is sulphur trioxide. The type of marking produced is a whitish pitting of the leaf surface.

Several types of markings are produced on leaves by atmospheric pollutants that have to be absorbed by the leaf tissues.

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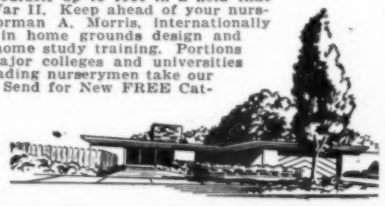

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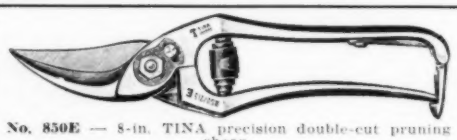
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lapse and death of the tissues more towards the margins and tips of the leaves than toward the center. There is no relationship between the leaf veins and the locations of the markings. The color varies from a dark brown through tan to almost a silvery appearance. Often the spots are small and close together, so that the over-all appearance of marked leaves is a powdery one. Fully expanded leaves, but not old leaves, are the most sensitive. Partially open leaves are highly resistant and are rarely marked by the gas. Often ammonia is used in irrigation water as a source of nitrogen. If this gas escapes and hits the underside of leaves, a lower surface silvering may be produced, superficially resembling smog markings.

Of all the fumigants and air pollutants that have been tested, chlorine is the only one which produces markings that are not duplicated by other pollutants. Dead areas are caused between the veins of broad-leaved plants, generally toward the center of the leaf. The color of the markings varies from yellow to white, or from brown to white, depending on the species involved. This difference in response between species seems to be related to the presence or absence of certain oxidation enzymes. The distinctive feature of chlorine markings, however, is the netted appearance of the marked leaves. Actually, the tissues directly over the veins remain green, while the chlorosis develops on either side of the veins.

The markings produced by hydrogen sulphide are different from those produced by other fumigants in that the youngest leaves are the most sensitive and hence are marked first. Occasionally the growing point of the stem was killed in the tests. This was not noted with other fumigants. The markings are usually light tan to white in color. The markings more often than not developed from the point where the blade of the leaf was attached to the stem.

Two main types of markings are produced by oxides of nitrogen, the usual collapsed dead tissue and a waxy, shiny green coating on the leaves. The collapsed tissue markings consist of irregular-shaped areas generally located between the important side veins, but usually closer to the margin of the leaf than to the midrib. The middle-aged leaves or those fully expanded but not yet senescent are the most sensitive. The youngest leaves always show the least amount of marking.

The color of the markings is usu-

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ally white to tan, although in an occasional species the markings are a dark brown.

The waxy, polished green markings not associated with killed tissues have been observed on about 50 per cent of the species. The occurrence of this symptom is not associated with the age of the leaf. It occurs on both surfaces of the leaves of some plants and the upper surface only of leaves of other plants. The symptom usually disappeared about a week after exposure.

Chlorine Dioxide

Chlorine dioxide, which may be emitted by chemical or processing plants, causes the development of an orange color over most of the surface of the leaf area. Its effect is more like a complete bleaching out of the green chlorophyll, leaving the orange carotin and yellow xanthophyll behind. With Douglas fir trees, this orange color develops, and at the same time the needles tend to drop.

When tars and pitches are heated, certain organic compounds are evolved which are quite harmful to some plant species. These materials (hydrocarbons) produce a black upper surface marking on the leaves.

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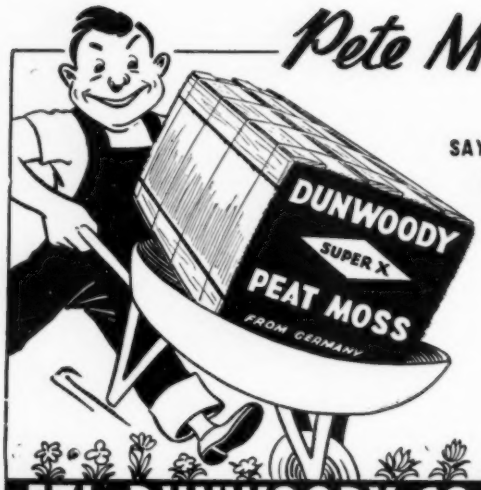
With other plants a browning appears along the veins of the leaves, accompanied by an upper surface silvering. It is interesting that if immediately after exposure the plants are transferred to the dark, the markings do not develop. If the exposure is severe enough, the leaves dry and drop without developing the other symptoms.

Sulphur Dioxide

Probably more work has been done on the effects of sulphur dioxide on vegetation than any other pollutant. Observations have been made in the field and in fumigation chambers as



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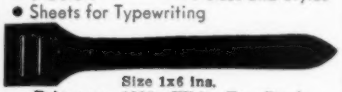

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to its effects on vegetation. A great many shade trees are included among the plants studied. Sulphur dioxide is emitted from smelters, oil refineries, burning coal and many other sources. It is highly toxic to vegetation. Less than one fourth of a part per million parts in the atmosphere will mark some plants. Much of the information gained was obtained as a result of the fumigation of the Columbia river valley in the United States by a smelter located at Trail, B. C., Canada.

With coniferous trees such as Douglas fir and ponderosa pine, sulphur dioxide produces a reddish discoloration of the needles, followed by a shriveling of the dead tissues. These discolorations may occur at the tips of the leaves only or as a band over the entire length of the needles. With Douglas fir, the needles then may be quickly shed, i.e., in a few days; with yellow pine the leaves may remain for a year.

With broad-leaved trees such as maples, the markings produced by sulphur dioxide are usually ivory white in color and occur for the most part between the main veins. Occasionally the markings are marginal, with branches into the interveinal areas. Also, with some species the markings are fairly dark brown instead of ivory.

Hydrogen Fluoride

As far as concentrations in the atmosphere which will produce markings on vegetation are concerned, hydrogen fluoride is probably the most toxic air pollutant known. Thus, concentrations of one part per billion in the atmosphere over a period of several days will mark many species of plants.

Fluorides are easier to work with than certain other air pollutants, because they normally occur in vegetation in such minute quantities that chemical analyses of plants can be used to determine if fluorides are present in the atmosphere. From analyses of the tissues and different parts of leaves exposed to fluorides, it has been ascertained that when fluorides are taken into the leaf they are translocated to the tips or margins, where they accumulate in such quantities as to kill the cells. Thus fluorides are an example of a material being translocated to the cells which are usually the first ones killed.

Among the broad-leaved plants that are sensitive to fluorides might be mentioned gladioli (probably the most sensitive), mettleleaf goosefoot (a weed which occurs widely throughout the United States), apri-

cots and Italian prunes. The symptoms of fluoride on broad-leaved trees usually consist of the death of the tissues at the tip or margins of the leaf. Sometimes, with unusually high concentrations in the atmosphere, an intercostal type of marking develops. This is apparently due to the rapid killing of the tissues where the fluoride is absorbed before it can be translocated to the margins.

Smog

Smog is an air pollutant which everybody talks about and everybody seems vaguely familiar with. Yet, perhaps less is positively known about it than most other pollutants. Because of this, a little discussion of smog is in order. Smog is a term which is now used loosely to describe a smoky, hazy condition of various density which exists over urban areas. Using this definition, cities such as Pittsburgh, Pa.; Cincinnati, O., and St. Louis, Mo., have had smog for over 50 years; yet the effects of these smogs are entirely different from the effects of the Los Angeles-type smog. The Los Angeles smog seems to result from the action of sunlight on nitrogen dioxide and unsaturated hydrocarbons, and other compounds produced by combustion processes and other industrial and individual activities. The type of smog suffered earlier at Pittsburgh and Cincinnati is the result of direct evolution of materials into the atmosphere. Sulphur dioxide is an important feature in the smog of eastern cities, yet when sulphur dioxide was removed in large quantities from the Los Angeles atmosphere, the condition was not improved and, from what we know now about smog formation, it may have made it worse.

The Los Angeles-type smog is not unique to Los Angeles. It occurs in the San Francisco bay area rather frequently, especially during the fall and winter months. Its effects on plants in greenhouses at the institute were first observed in 1951. In recent years it was so bad that absorbers were installed in the greenhouses to assure healthy plants for the various studies. A fairly delicate instrument is used for detecting the occurrence of smog. This device consists of the leaves of two plants which are quite sensitive and occur almost everywhere. These are annual bluegrass and cheeseweed. The cheeseweed is usually marked on the lower surface of the leaf. Superficially the affected leaf looks as though someone had sprinkled pepper between the veins toward the base. Annual bluegrass is marked by a white tip die-back often accompanied by bands of white tis-

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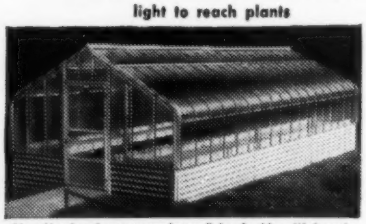

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sue at intervals further back from the tip.

Smog markings on vegetation take several different forms. It is most severe on the leafy vegetables. The best known symptom is the so-called silver leaf, which occurs on the lower surface of the leaves.

A similar type is the bronzing that develops on the lower surface of Romaine lettuce. Another type is the tip browning plus the silvering that occurs on endive. Grasses usually are marked at the tip. There are reports of banding on various grasses, and this is believed due to successive exposures.

The effect of smog on trees has not been studied to the extent of its effect on other plants. However, the symptoms produced on the leaves where noted have resembled those mentioned here.

In all the air pollution work, the possibility is always mentioned that perhaps even though no signs of injury are present on the leaves or other organs of the plant, the air pollutant is slowing down the growth of the plants. This possibility has been investigated with sulphur dioxide, hydrogen fluoride and smog. No such effect has been found with sulphur dioxide; there may be such an effect from hydrogen fluoride. But the published work indicates that there is such an effect from smog.

Thus, sugar beets grown under conditions of cleansed air were larger than those grown in uncleaned air, even though no markings appeared on the leaves of either plants.

Other factors in the environment may produce markings like those described here. Various virus diseases produce symptoms similar to chloride injury; various root diseases can produce symptoms similar to sulphur dioxide effects. Nitrogen deficiency and chronic sulphur dioxide injuries are similar. Winter injury to ponderosa pine is almost identical to fluoride injury. Both cause the death of the needle from the tip back; the color is about the same. The only real difference is that the needles that are winter-injured almost never have a dark band at the interface between the healthy and injured tissues.

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Letters from Readers

WINTERING TREE ROSES

Taking cognizance of your little insert "What's News?", I thought perhaps our experience at Phillipswood Gardens (Bristol, Tenn.) with tree roses this past season might be of interest to the trade. These plants were somewhat of an innovation in this area; the public was inclined to shy away from them, because of the misconception they had about overwintering them.

Thirty-six years ago when I first arrived from England I, also, was somewhat skeptical about my ability to overwinter tree roses on Long Island, New York, due to the instructions given me by nurserymen at that time. These instructions were to the effect that at the dormant stage of the plants in the fall I should half lift the roots to enable me to bend the stem over enough to bury the head in leaves and cover with soil. Inasmuch as this process would have ruined a beautiful bent lawn, I refrained from following the directions. As far as I know, this advice is still being given, or is still being accepted as the only method. Therefore, I thought rose growers and other trade members would like to know about a system I have followed over the years and have found perfectly successful, as follows:

1. Prune back current year's growth one third.
2. Pack remaining growth on head reasonably firm with straw or excelsior as a cushion between branches.
3. Cover entire head with burlap. A slight tap on the main stem will immediately dislodge any snow that may accumulate.

The first winter the stem was wrapped from the soil surface to the head. The plants came through all right, although it was a severe winter. Afterward I omitted this wrapping process as it seemed to cause suckers.

I should appreciate comments from other nurserymen on their methods.

John W. Edwards

RONALD J. SCHLICK, landscape designer and consultant, 16 Bowler road, Lynbrook, N. Y., is starting a nursery specializing in broad-leaved evergreens.

ROSE GARDENS, operated by H. Arends at Edmonton, Alta., Canada, was discontinued at the end of September, the property having been sold.

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Arborists' Opportunities

By George A. Spader

If a specialist knows "more and more about less and less," then a horticulturist knows "less and less about more and more." The hardiness problem has been my hobby for 36 years. During that time I am more and more convinced that I know less and less about it.

The causes of winter injury are well known to be low temperature, sudden drop in temperature, dessication by wind and sun, ice and snow breakage and a combination of drought, poor drainage, poor soil, insect and disease injury and the pH of the soil. I subscribe to the theory of Curtis and Clark, "Introduction to Plant Physiology": "Death to the cells of plants occurs by freezing only when freezing causes ice formation within the cells. We have in no case found any cells to remain alive after ice once formed in them."

So hardiness—or lack of hardiness—creates the most opportunities for the arborist to work. The possible jobs include: Pruning out dead and broken limbs, cabling bad crotches, staking down, staking up, bracing, shading, propping, watering, feeding, spraying, applying wax emulsions, removing and replanting.

The site of our 89-specimen deciduous arboretum and 150-specimen shrub garden at the Agricultural and Technical Institute, State University of New York, at Morrisville, provides a good testing ground for hardiness. Our elevation is 1,325 feet. English ivy thrives on the north side of Helyer hall. Mahonia aquifolium (Oregon holly grape) burns to a scrub oak brown on the south side, yet it survives and makes good growth each summer. Amur river privet was killed to the ground once in 30 years, in the winter of 1933-34. Forsythia blooms are killed above the snow line one year in three or four. Irish juniper browned badly on the exposed northwest side, but after a few years of survival took hold and made a good specimen. Weigela, deutzia and kolkwitzia often kill back at the tips.

There Will Always Be Work

The fact that gardening is by all odds the principal avocation of Americans and that nine out of 10 of us take our greatest pride in exotic plants is a positive guarantee for the need of the services of the arborist. The first plant any gardener shows you is his unusual one. Johnny Appleseed (George Terziev, of Syracuse) is proudest of his paulonia (empress tree) 25 feet tall. Dr. Ray Hirt excited my curiosity with his holly collection. I show off my gift plant, Daphne mezereum, in March. We do not brag about the native hardy common things. We will not plant shrubs and trees which are adapted, hardy, just the right size and guaranteed not to require maintenance. I am bound to keep trying to grow Liquidambar, Kentucky coffee tree, redbud, gingko, Nyssa sylvatica and a hundred other shrubs and trees that may not survive, but I continue to hope that they will. We forget that a bluegrass lawn will take over for us in central New York, whether we baby our lawn or not. We do not brag about that. We take it for granted.

Another source of opportunity for the arborist is the premise, "We have too many trees." The prejudice should be overcome that has imbued in us the slogan, "Spare that tree." They are too thick on most of our suburban and village streets. They hide good vistas on our scenic highways. We have three poor specimen plants galore where one good tree would be a greater asset. There is work in this field for the arborist, so much that the end may not be seen.

We American gardeners are going to continue to plant the unusual; we are going to continue to plant too many plants, and we are going to continue to plant the right plant in the wrong place to the continued lucrative usefulness of the well-trained arborist.

Recommendations

In conclusion, I am submitting my lists of 10 best trees and five best shrubs for central New York conditions. There are two lists of each, one for the best for the homeowner, the other the best for the arborist. After the name of each tree I give the reason it is the best for the homeowner or the best for the arborist:

The 10 Best Deciduous Trees for the Property Owner

Sugar maple, Acer saccharum—Best tree in spite of dead wood and bad

---

Summary of talk to New York State Arborists, Syracuse, N. Y., by Prof. George A. Spader, State University of New York, Agricultural and Technical Institute, Morrisville, N. Y.

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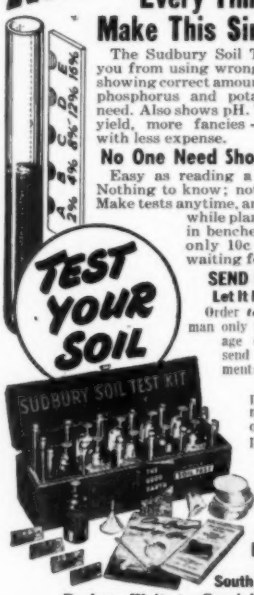

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Norway maple, Acer platanoides sp.—Dense, hardy, spreading.

American elm, Ulmus Americana—Abundant, traditional, nostalgic.

Pin oak, Quercus palustris—Slow growing, upright, autumn color, free from pests, summer flowers.

Red maple, Acer rubrum—Hardy, free from deadwood, spring to autumn color.

Black oak, Quercus velutina—Hardiest oak, neutral form, color, little maintenance.

Japanese lilac, Syringa japonica—Hardy, small tree, summer flowers, no maintenance.

Asiatic elm (Chinese), Ulmus pumila—Hardy, very fast grower, meets the need.

Willow, Salix sp.—Needed for that wet place, rapid grower.

The 10 Best Deciduous Trees for the Arborist

Sugar maple, Acer saccharum—Abundant anyway, dead limbs, bad crotches, need cabling, spray once, historic, popular.

American elm, Ulmus Americana—Have too many, need spraying, pruning, replacing.

Willow, Salix sp.—Always deadwood, break easily, overgrow their environment, clog drains.

Flowering crab apple, Malus sp.—Need spraying.

Sycamore (buttonball, plane tree, platanus sp.)—Deadwood removal.

Honey locust, Gleditsia triacanthos—Deadwood, debris.

Soft silver maple, Acer dasycarpum—Brittle wood, pruning desirable.

White ash, Fraxinus americana—Prolific, brittle, fast grower.

Box elder (ash-leaf maple), Acer negundo—Weed type, brittle, needs pruning.

Western catalpa, Catalpa speciosa—Coarse, makes debris.

Poplar and/or e.g. Lombardy, Populus italica nigra—Always deadwood—those drains again!

The Five Best Large Shrubs for the Property Owner

Van Houtte's spiraea, Spiraea vanhouttei—Very hardy, graceful, good flower, needs little pruning. Faults: Too common, aphis.

Mockorange, Philadelphus coronarius—Very hardy, vigorous, good flowers, fragrant, no maintenance if planted in right place.

Lilac, syringa sp.—Hardy, good flowers, popular.

Siberian pea tree, Caragana arborescens—Hardy, interesting flower, novel.

Winged euonymus, Euonymus alatus—Hardy, corky bark, autumn color, fruit, not overplanted.

The Five Best Large Shrubs for the Arborist

Mock orange, Philadelphus coronarius—Often planted in the wrong place; once dehorned has to be pruned each season.

California privet, Ligustrum ovalifolium—Often kills back to ground; needs replacing, pruning.

Rose (not always large), rosa sp.—

G-5

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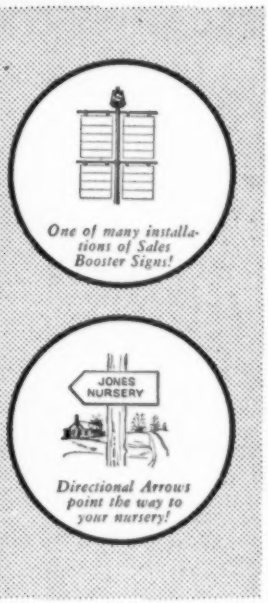

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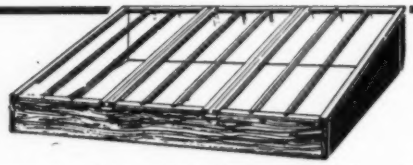

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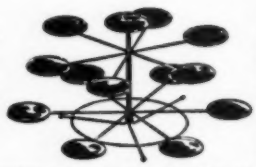

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Pruning, spraying, replacing, winter protection.

Lilac, syringa sp.—Spreads from roots, overgrows, needs spraying, judicious pruning.

Evergreen trees (used as a shrub) e.g. Colorado blue spruce—Planted in wrong place; does not stand pruning too well; needs replacing.

GARDEN CENTER OPERATION

[Continued from page 16]

The accrual method of keeping books involves the recording of all transactions whether they are completed or not. Any transaction such as a sale or a purchase that is begun during the month is entered in the records and its value is taken into consideration, contingent upon its completion. Under this system the inventory is also recorded and evaluated.

Although more complicated than the cash basis of accounting, the accrual system gives the proprietor a more complete picture of his financial status at the end of the month. Thus he has a better picture of the progress he is making and can exercise better judgment with reference to the future.

All garden center operators who are starting in business are strongly urged to consult qualified and trusted accountants for advice in selecting their method of accounting and choosing their fiscal year. The peculiar seasonal nature of the business should be explained fully to the accountant to enable him to make an intelligent decision. Garden center operators are also urged to hire accountants to set up their books, working out all essential details. Mistakes in bookkeeping systems or practices can be very costly. As in the case of the fiscal year, the method of accounting that you choose is the one you will have to continue using. The Treasury Department looks with disfavor upon changing from one system to another, in fact, does not permit it without good cause.

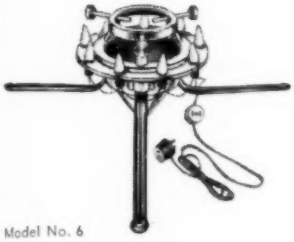
Stock Records

Aside from the set of books they are required by law to keep, many nurserymen are lax about their records. It is true that one can go off the deep end in keeping records, all sorts of records. It is possible to go so far with record keeping that it becomes a burden. A good rule to follow is to maintain only those records which can be useful to you and which you will actually use in such a way as to help you make progress in your business.

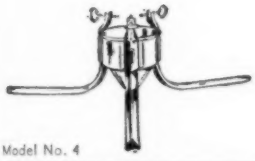
One record that should be kept

Model No. 14

Model No. 8



Model No. 6



Model No. 4

30 MILLION CHRISTMAS TREES SOLD EVERY YEAR!

Everyone needs a tree holder. Get your share of this business with the HANDY holders — nine models from which to choose.

User can set up a tree in less than a minute. Holders are well balanced, simple, strongly constructed. Will last a lifetime. Ball-shaped feet eliminate any possibility of marring highly polished floors.

Finishes available from lustrous chrome to red and green high-baked enamel.

CHRISTMAS TREE

A Real Sales Getter

18 ins. high, 8-in. diameter.

Has the plus sales appeal of an "extra" tree for table, buffet or mantel decoration. Brilliant green and silver metallic aluminum foliage. Has 24 miniature ornaments in holiday colors. Base gold and chrome; tip chrome. Packed in individual, highly illustrated, corrugated containers. Ornamental tree also available. Ask for models No. 57-RM and No. 59.

HANDY THINGS MFG. CO. **LUDINGTON, MICH.**

by all garden centers is a stock record. Sometimes this goes under the high-sounding name of inventory control, but it consists merely of a record of your merchandise, what you have for sale and what you have sold. Only the smallest business can operate efficiently without some kind of stock record. The greatest danger in setting up an inventory control system is making it so elaborate and complicated that it is not only expensive to maintain but difficult to comprehend.

Why keep a stock record? The answer will be found in further questions: Exactly how many Peace roses did you sell last season? How many in the fall and how many in the spring? Did you sell out, or were there some left over, and if so, how many? Could you have sold more had they been available? Did you sell more Pfitzer junipers this year than last? What grades sold out, and is there a tendency on the part of the public to buy larger or smaller sizes?

Useful Data

Does a particular brand of peat moss sell better in bushel containers or in big bales? How much of it do you have on hand now and how long will it last at the present rate of sale? On the basis of past experience

WISCONSIN-GROWN CHRISTMAS TREES

Write for listing of producers of pine, balsam and spruce Christmas trees, boughs, wreaths, roping, etc.

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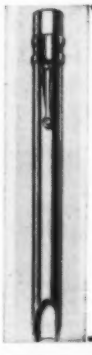
424 University Farm Place
Madison 6, Wis.



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NEW DOUBLE-CULTURED **VITALOAM** — TRADE-MARK — ORGANIC SOIL REJUVENATOR

FOR EVERYTHING THAT GROWS IN THE EARTH . . . ANYWHERE
REMEMBER—VITALOAM is BLACK and VELVETY SOFT and ORGANIC, COMPLETELY CHANGES TEXTURE, PHYSICAL QUALITY and APPEARANCE of soil, yet cannot BURN or HARM the TENDEREST PLANT OR SEED. Applied only ONCE A YEAR and NO fertilizer, peat or FILTHY MANURE necessary. Already approved and in use BY HUNDREDS of leading greenhouses and nurseries throughout America. If your jobber cannot supply you, we will ship DIRECT. HERE ARE LOWEST WHOLESALE PRICES.

In 80-lb. Polyethylene-Lined Printed Burlap Bags
2 to 3 bags ..... $6.00 ea.
4 to 9 bags ..... 5.40 ea.
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INTERESTED JOBBERS ADDRESS CHIEF OF RESEARCH 133 WILSON, LANCASTER, OHIO

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"HOLLANDIA" BURLAP SQUARES
REED MATS
for Coldframes
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◀ POSITIVE SHREDDING BLADES!

LINDIG MFG. CO., INC.
1875 W. County Road C—St. Paul 13, Minn.

do you have too much rose dust on hand and should you reduce your inventory for next season? At what time last spring did you sell out of that popular new variety of rose and how many more should you order to take care of the demand next season? Where did you buy that planter that proved to be so popular, and how much did it cost you? When did that shipment of taxus come in last spring? It was too late and you want to order earlier next season.

If you can answer these questions satisfactorily either you already have a very good stock record in operation or you have an excellent memory. All of this information and a great deal more will be available to you when you keep adequate stock records.

If you are growing some of your own stock, everything that is transferred to your garden center from your nursery should be entered on the stock record; otherwise you will not have a complete or true picture of your business. There may be times when items that you have been growing will not be available from your own nursery. Then your stock records will tell you how many you need to buy.

Avoid Hazardous Buying

The importance of keeping stock records may seem self-evident to you, but every wholesale salesman who calls on garden centers will tell you that there is much haphazard buying. For example, the buyer will say something like this: "Yes, I think we will need some of those forsythia. You can put us down for about 100 of the 3 to 4-foot size. No, let's see now, that might be too many. I think they sold rather slowly and we had some left over. In fact, I believe we potted some of them at the end of the season and they are in the lath house now. Let's go out and see." So out go the buyer and salesman to the lath house, taking valuable time of both, and sure enough there are some forsythia in containers which are two to three feet, instead of three to four feet. So the buyer cuts the order down to 50, two to three feet. Everything that he buys is bought in the same manner—he has to guess at his needs or else check his stock. Even then he does not have a true picture, because some things may have sold out early in the season and he could have sold more had they been available. He doesn't know that unless he has an excellent memory.

The simplest system of stock recording consists of keeping a record of where you bought your stock,

what you paid for it, when it arrived and what you had left at the end of the season, the last figure to be obtained by taking inventory. The difference between what you bought and what you had left will show you the amount of your sales. This system will answer many of the important questions propounded here, but not all.

Perpetual Inventory

A more elaborate system of stock recording is known as the perpetual inventory. Under this system a record is kept of all retail sales by filling out an itemized sales slip for each sale. The data on these sales slips are transferred daily or weekly to the stock record so that one can tell exactly how much unsold merchandise he has on hand at any time. For example, one may discover that a certain shrub is selling slowly and he may have a surplus at the end of the season. He can put on a special promotion to reduce his stock.

This system enables one to keep a much better control of his stock, but it requires a great deal more work. Each garden center operator will have to decide for himself which system will best fit his needs. In general it might be said that unless one does a big volume of business, with many fast-moving items, the perpetual inventory system would not be necessary.

Illustrated before are samples of cards from two different systems of stock recording. Card A is one of the simplest forms and can be set up either on loose-leaf systems or on the visible card method. Equipment for both systems is carried in stock by most office supply stores. The loose-leaf and visible card systems have the advantage of complete flexibility. You can add new varieties at any time and still keep the varieties in alphabetical order.

Card A gives a complete record for the season on Cornus florida. The top half of the card shows the supply. On the first of August, 20 Cornus florida, five to six feet, were purchased from Smith Nursery for $4 each. On October 3, 30, four to five feet, and 50, three to four feet, were bought from Brown Nursery at $3 and $2, respectively. Further information is given by means of symbols. The x after the source tells the buyer that the stock has been ordered in, and the ¾ in the upper lefthand corner of the 20, five to six feet, shows that the shipment was received March 4. Other symbols can be used for additional information that you would like to record.

The lower half of card A supplies

CHRISTMAS TREE GROWERS!

the sensational ROWCO

BRUSHKING

rugged, one-man portable, small tree and sapling cutter

WILL SAVE YOU TIME, LABOR, MONEY!

Perfect for ALL brush, grass and weed clearance!

Harvest up to 4 or 5 trees a minute with this high-speed, lightweight cutter! Cuts right to ground level . . . limbs and trims. Easy to operate and 100% safe! Use also for grass trimming (with attachment) and all brush, briar, weed, undergrowth clearance. Cuts close to poles, fences, rocks . . . low-cost, pays for itself in no time!

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Two models: Standard at $365 and the M-55 at $245 for easier sites.
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RA-PID-GRO
Makes More Money For You 2 WAYS!

1. Use it!
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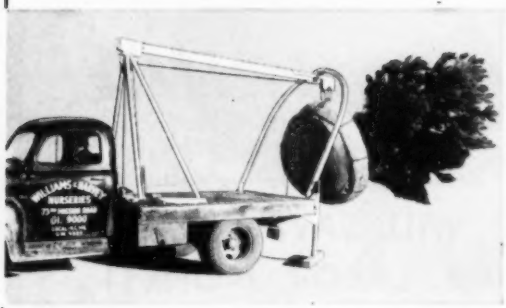

Since Williams & Harvey announced this new, improved big-tree mover three years ago, leading nurseries, tree surgeons and park departments in all sections of the U.S. have adopted it.

- New Lighter Weight
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- Two Sizes, 6 Ft. and 7 Ft.
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- Fits Any Standard Truck

Write for specifications and address of users near you.
Six-foot mover (as pictured) complete with power winch and all needed pickup parts, **$1,675.00** F.O.B. Kansas City, Mo.

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★ YOU GET THE BEST PART —
★ THE PEAT FLAKES.

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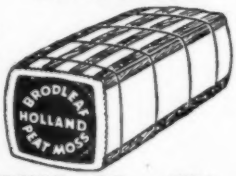
Also Ask for Special Offer Holland Burlap Squares.



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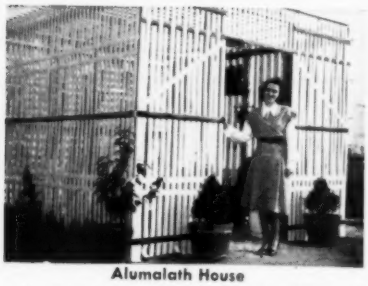

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information that enables you to figure how many of each grade of the Cornus florida were sold during the season. This is accomplished by taking inventory at intervals. The difference between the inventory figure and the stock gives the sales to date. The more often the inventory is taken the closer check one has on his stock. For example, this card shows that on the first day of April there were 15 on hand; on May 1 there were eight on hand, and at the time of final inventory on July 1 there were none on hand, showing that all 30 had been sold. On the other hand, there were five, four to five feet, and 10, three to four feet, unsold at the end of the season.

Purchases and Sales

Card B illustrates a more elaborate stock record, including a perpetual inventory. From this card we learn that from the Smith Nursery, on October 3, 100 Red Radiance roses, No. 1, were bought at a price of 60 cents and 50 No. 1½, at 45 cents. No. 1 grade was delivered in full, but there was a shortage of four in the medium grade. By the end of the season, 72 of the No. 1 grade were sold, but all of the medium grade were sold. The inventory figures are cumulative, reading down. The first 12 means that at the time of entry 12 No. 1 bushes had been sold. The next figure, 18, shows that six more had been sold, etc. These figures are taken from sales slips. By entering only the cumulative total, both time and space are saved and the stock situation can be analyzed more quickly.

Thus from card B we can learn how many plants were bought, from whom, when, price paid, when delivered, number received, how many have been sold on any given date. From the perpetual inventory figures one can know instantly and at all times how much stock is on hand, when more is needed and when there is too much. Requirements can be anticipated and the stock kept better balanced. The disadvantage of the system is that it takes more time to operate and some of the details may not be essential to your business.

Stock records become more valuable the longer they are kept. Comparison of the yearly records shows the trend in sales. One can buy more intelligently; he knows when to buy more, or less, and when to eliminate a variety entirely.

HARRY E. MUSGROVE, owner and operator of Ralph's Nursery, Coolidge, Ariz., recently opened a branch at Eloy.

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Superior Strength Sturdily constructed, the MENNEPOT withstands hard handling.

Stapled Bottom Comes completely assembled . . . Potting can start immediately upon arrival.

Light Weight The MENNEPOT is economical to use. Light weight makes shipping costs less.

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Size 0 Top .....4 ins. Bottom 3½ ins. High ....4 ins.
Weight per 100
Regular 10 lbs., Heavy 25
Regular Weight Price
100..$2.75 1000..$25.00
Heavy Weight Price
100..$3.75 1000..$35.00

Size 0½ Top .. 5 ins. Bottom 4 ins. High . 5 ins.
Weight per 100
Regular 13 lbs., Heavy 30
Regular Weight Price
100..$3.50 1000..$32.50
Heavy Weight Price
100..$4.50 1000..$42.50

Size 1 Top .....6 ins. Bottom ..5 ins. High ....6 ins.
Weight per 100
Regular 15 lbs., Heavy 35
Regular Weight Price
100..$4.00 1000..$37.50
Heavy Weight Price
100..$5.25 1000..$50.00

Size 2 Top .....7 ins. Bottom 5¾ ins. High ....9 ins.
Weight per 100
Regular 24 lbs., Heavy 55
Regular Weight Price
100..$4.50 1000..$42.50
Heavy Weight Price
100..$5.75 1000..$55.00

Size 3 Top ...8½ ins. Bottom 6½ ins. High ....9 ins.
Weight per 100
Regular 30 lbs., Heavy 70
Regular Weight Price
100..$5.00 1000..$47.50
Heavy Weight Price
100..$6.25 1000..$60.00

Size *4 Top ....10 ins. Bottom ..8 ins. High ...10 ins.
Weight per 100—120 lbs.
100..$11.00
500..$52.50 1000..$100.00
*Heavy Only—
For trees and shrubs.

Size *5 Top ....12 ins. Bottom .10 ins. High ...12 ins.
LG. POT
Weight per 100—250 lbs.
20..30c ea. 100..$27.50
500...$125 1000...$225
*Special for extra-heavy trees and large shrubs.

Size Pan Top ...8½ ins. Bottom 7½ ins. High ....5 ins.
PAN
Weight per 100
Regular 30 lbs., Heavy 70
Regular Weight Price
100..$5.00 1000..$47.50
Heavy Weight Price
100..$6.25 1000..$60.00

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500 of a size takes 1000 rate in sizes 0-0½-1-2-3-Pan. Regular-weight pots packed 100 and 200 per carton in sizes 1-2-3-Pan. Size 0, 250 only. Size 0½, 200 only. Heavy pots are packed 250 per carton in size 0, 100 per carton in sizes 0½ and 1; 50 per carton in sizes 2, 3, Pan and 4, and 20 per carton in size 5. NO BROKEN CARTONS.

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TOLERANT LYTHRUMS

Lythrum is a name which has risen rapidly in prairie garden popularity during recent years. The term is from the Greek and means blood. Although there have been such common names for these plants as loosestrife, blackblood, willow-herb, sage willow, red Sally and rainbow weed, the botanical name has been now generally accepted as the common name.

Lythrums are mostly denizens of moist locations, low grounds, swamps and meadows. They tolerate many types of soil and can fend for themselves when planted in close association with shrubbery. These plants withstand considerable shade. They also do well in full sunshine.

Three species of lythrums are of importance to gardeners. Lythrum salicaria or purple lythrum (purple loosestrife) and L. virgatum or wand lythrum (wand loosestrife) are from Europe and northern Asia. L. alatum, or winged lythrum, is native to North America. The first two are mostly employed in gardens. The last one has proved of value in plant breeding at the Morden experimental farm, Morden, Man., from which come these comments on lythrums.

Important Species

L. salicaria grows, in nature, from two to three feet, but may attain five feet in a cultivated garden. Flowers are borne in July and August. The foliage is willowlike and opposite in arrangement. The shoots are long, erect, graceful spikes, and the brightly colored flowers are mostly reddish-purple. There are a number of named varieties.

L. virgatum is somewhat more compact in growth. It bears the brightest flowers of the three species, but they are smaller. A well-known European variety is Rose Queen. Morden Pink lythrum arose as a bud sport on the common wand lythrum at the experiment station and was named in 1937. On a plant which was bearing rather dull violet-purple flowers, one branch arose which produced flowers bright pinkish in color and relatively large. These developed little seed, with the result that the plant had a prolonged blooming season. Propagation is by means of green cuttings. These root readily in sand.

Morden Pink lythrum has met wide popularity as a bright, showy, hardy perennial which adorns the border attractively from late June until early or mid-September in southern Manitoba. In favorable locations it may attain five feet in height, but is usually only three to four feet tall.

New Developments

Morden Gleam and Morden Rose lythrums are new varieties developed by crossing the popular Morden Pink, which is an almost self-sterile mutation of Lythrum virgatum, with select forms of native Lythrum

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THERE'S A UNION POT TO FIT IT!

Whatever your specialty - whether it's tiny cacti or generous-size shrubs and evergreens - there's a Union Pot that's just the right size for your needs. Union Flower Pots - of sturdy plastic - range in size from 1 1/4 to 10 inches...and the line includes not only standard Pots, but Tubs, Pans and specially designed Azalea Pots as well.

Check the list of available sizes and styles below and see how well the Union Line fits into your operation. You'll agree: Union offers the widest range of sizes and the most complete line of plastic Flower Pots, Tubs and Pans available to the trade today!

A SIZE FOR EVERY GROWING NEED!

PLASTIC FLOWER POTS

No.	Inside Dimensions Dia.	Depth
F10	1 1/4	1 1/4
F215	2	2
F216	2 1/4	2 1/4
F222	2 1/2	2 1/2
F217	3	3
F218	3 1/2	3 1/2
F219	4	4
F226	5	5
F224	6	6
F1108	8	8
F1110	10	10

PLASTIC TUBS

No.	Inside Dimensions Dia.	Depth
F220	3	2 1/4
F221	4	3

PLASTIC SAUCERS

No.	Dia.
F515	2 3/4
F516	3 3/4
F517	4 7/8
F521	5
F522	6
F523	8
F524	10

PLASTIC AZALEA POTS

No.	Inside Dimensions Dia.	Depth
F223	5	4
F227	6	4 1/2

PLASTIC BULB PANS

No.	Inside Dimensions Dia.	Depth
F1101	5	2 1/2
F1103	6	3 3/4
F1102	7	3 7/8
F1104	8	4
F1109	9	4 1/2
F1107	10	5

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alatum. Both these varieties are superior to Morden Pink in color and plant form, but they tend to heavy seed production, which somewhat shortens their flowering season. Both varieties are available in the trade.

Morden Gleam, a vigorous plant, grows to four and a half feet, is spreading and bears the largest spikes seen in any of the lythrums. The color is deep rosy-pink, fading slightly in hot weather. Many side branches produced from the main stems prolong the season of bloom and give to the plant a graceful appearance.

Morden Rose is more compact than either Morden Gleam or Morden Pink. The foliage is broad, abundant, dark green and glossy. The flowering season is a week or so later than any of the lythrums tested at Morden; the color, considered the brightest yet seen in lythrums, is a rich rose-red, durable through periods of heat and drought.

Several European varieties have been on test at Morden, including Brightness, Rose Queen, Perry's Variety, Lady Sachville and Mr. Robert; the last-named is well recommended, but none is superior to the Morden varieties. Most of the European introductions are less thrifty, somewhat dull in color and of shorter blooming period.

A welcome companion plant is Dropmore Purple, raised by Dr. F. L. Skinner, Dropmore, Man. The long sprays of purple flowers are freely produced from July until September.

Plants are increased readily by means of softwood cuttings. Seeds from open-pollinated plants produce a diversity of poor colors.

STRAWBERRY WEEDING

Chemical weeding of strawberries is not a cure-all, but it may reduce hand labor by perhaps two thirds, declares Dr. Otis F. Curtis, Cornell scientist at the New York agricultural experiment station at Geneva. Chemical weeding may also serve as an emergency means for reclaiming strawberry beds badly fouled with weeds. A folder on weeding strawberries, prepared by Dr. Curtis and available upon request to the experiment station, states that because most strawberry plantings contain weeds of such various types and different seasons, complete control is unlikely with any single treatment. Selective materials are available for different situations.

One material, Crag herbicide, can be applied to the soil before the weeds appear and will kill them as

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they sprout, the folder indicates. Crag kills most weeds that start from seeds, including annual grasses and chickweed. A treatment will last a month, unless the soil is disturbed, bringing fresh weed seeds to the surface, it is added. Sprays of 2,4-D are effective against broad-leaved weeds.

Other useful spray materials are also described in the folder, which also contains a comment on the effectiveness of young geese in weeding the strawberry bed.

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1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, American Nurseryman Publishing Co., 343 S. Dearborn St., Chicago 4; Editor, F. R. Kilner, 343 S. Dearborn St.; Managing Editor, F. H. Kilner, 343 S. Dearborn St.; Business Manager, F. H. Kilner, 343 S. Dearborn St.

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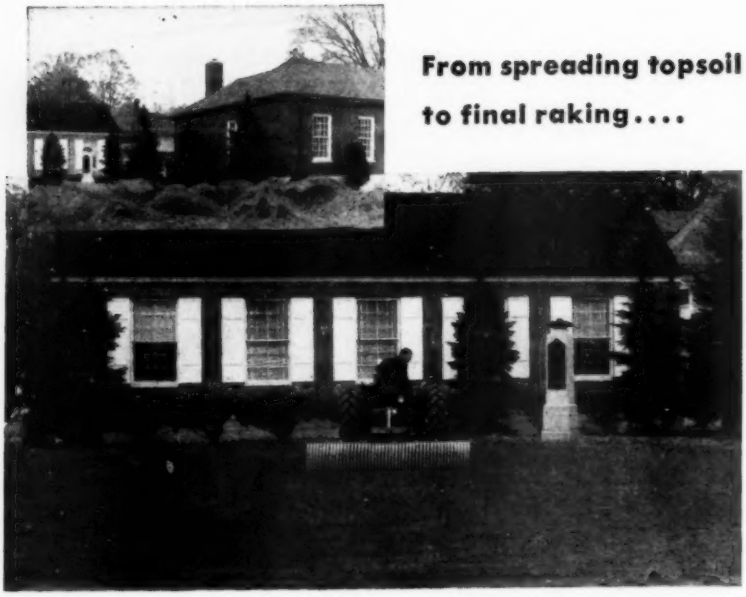

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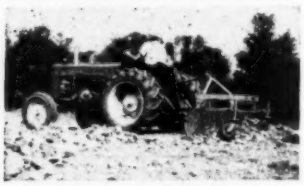

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ABSTRACTS
OF RECENT RESEARCH

TAXUS MEALY BUG SPRAY

A severe infestation of the taxus mealy bug, Pseudococcus cuspidatae, was eliminated with malathion sprays by John A. Weidhaas, Jr. and Frank R. Shaw of the University of Massachusetts, according to a report in the Journal of Economic Entomology, Vol. 49, No. 2.

First discovered in June, 1955, the insects had damaged twelve taxus trees about 18 feet high. Foliage was sparse and the needles were caked with honeydew and sooty mold. Observations by the authors indicated at least two generations of mealy bugs a year.

Several malathion, DDT, and BHC sprays were tested. Malathion emulsifiable concentrate used at the rate of 2 pints per 100 gallons of water gave the most rapid kill, although at the rate of 1 pint and in combination with DDT, equally effective control was obtained. BHC sprays were not effective. I.

OAK WILT FUNGUS

The longevity of the oak wilt fungus in red oak lumber sawed from infected trees was investigated by George H. Englerth, John S. Boyce, Jr., and Elmer R. Roth, of the forest service, United States Department of Agriculture. Their work was reported in Forest Science, volume 2, No. 1.

The fungus was isolated from boards with the bark removed that had been air seasoned for as long as 16 weeks in one instance and bulk piled for 18 weeks in another. Considering a log storage period of six weeks from the time of cutting, the fungus was still viable after 22 weeks and 24 weeks, respectively, in air-seasoned and bulk-piled boards.

The fungus was not isolated from sapwood that contained less than 20 per cent moisture.

Spraying the surface of boards with sodium pentachlorophenate did not kill the fungus in the wood, but steaming them for one-half hour or kiln drying did.

Although the fungus occurred only in the outer sapwood of the living trees used in this study, it penetrated to a sapwood depth of at least one inch in boards within two weeks after sawing and in logs after six weeks' storage period. D.

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